WATER RATES: A REVIEW OF FLAT RATE FACTORS

PREPARED BY
THE FINANCE DEPARTMENT STAFF COMMITTEE
ON FLAT RATE FACTORS

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A

REVIEW

OF

FLAT RATE FACTORS

FINANCE DEPARTMENT

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ON

FLAT RATE FACTORS

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December 1983

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1. EXECUTIVE SUMMARY

The following report was initiated by the City Treasurer in October 1981. It is a study of the current Flat Rate Factors used by the City of Toronto to establish water rates for non-metered users. A thorough investigation was undertaken and is reported in four analytical sections.

Chapters 1 and 2 are an executive summary, and a statement of the purpose of this report.

Chapter 3 provides the reader with a description of the evolution of the flat rate system and an outline of the division of responsibilities for the Water Works Operation within the City of Toronto.

Chapter 4, under five sub-headings, is an evaluation of the existing system, and a discussion of its impact on the various operations of the City as well as our ratepayers.

Chapter 5 is a compendium of other systems in common use in the Province of Ontario and a discussion of their relative merits.

Chapter 6 is a discussion of viable options for Toronto for charging other than by meter measurement.

The principal conclusions are summarized as follows:

* All evidence indicates that the method of determining flat rate charges currently in place in the City of Toronto is the most broad based and equitable of the systems examined. Despite the fact that it requires a relatively large inspection staff, to maintain adequate records, our system, identified for the purpose of this report as the "Internal Multiple Method of Factoring" (this means the water bill is calculated by adding together a number of variables inside the physical area of the building) provides an efficient, effective and fair system for an economical administrative cost.

* An examination of full metering found that while attractive because of its high degree of accuracy and accountability that this option continues to be too expensive to implement completely in the forseeable future.

* It is concluded that the current combination of flat rate and meter accounts be maintained.

* A review of the Water Works By-law 102-67 has identified 25 changes to Schedules A, B and C of the Flat Rate Factors that are desirable.

2. PURPOSE OF THE REPORT

At the request of the City Treasurer a review of flat rate factors used for billing purposes by the Water Revenue Branch of the Finance Department was initiated. Periodically, it is necessary to update the factors. It is also appropriate at the same time to evaluate the effectiveness of the City's flat rate and meter billing system.

An update of By-law No. 102-67, (see By-law 102-67 as amended. Appendix, Exhibit A) respecting the Water Works and Rates, is required to ensure that the factors detailed in the Schedules to the By-law are revised and to delete obsolete factors and include new rates for water consuming appliances not previously covered in the By-law.

Any review of the flat rate system must consider the rationale behind the flat rate system. Meters are installed at many locations throughout the City and are used virtually throughout all of the other area municipalities in Metropolitan Toronto. A search as far back as the 1870's has failed to explain exactly how the original flat rate system was arrived at. Therefore a rationalization for the use of flat rate factors is developed in this report.

This background report will provide the supporting material for a report to the Executive Committee from the Commissioner of Finance recommending changes to By-law No. 102-67.

Included in this report is a description of the present flat rate factor system, an assessment of water billing systems used in other municipalities, an evaluation of the options available to the City and recommendations regarding the report to be made to the Executive Committee.

3. BACKGROUND

Introduction

The Water Works Operation of the City of Toronto operates as a self-sustaining entity based on a user charge principle. Water is purchased from Metropolitan Toronto and sold to the City's ratepayers at a price sufficient to cover the cost of water, administration and maintenance and development of the water distribution system. Revenue is obtained through the billing of metered and flat rate accounts for water consumed, and from a charge per hydrant to City taxpayers for the provision of fire fighting capacity in the water distribution system.

A fee of $132.83 is assessed against the Fire Department for every hydrant in the City. In 1983 they were charged for 9,008 hydrants for a total of $1,196,532. As the Fire Department is not a revenue producing operation this amount is in turn recovered through taxes.

In recent years the rate structure for revenue has financed all capital improvements to the system without resort to debenturing.

Division of Responsibilities

The Finance Department of the City of Toronto is responsible for the financial aspects of the Water Works Operation. The Water Revenue Branch of the Finance Department has been established to administer the reading of meters, inspection of flat rate accounts and the billing and collection of water and sewage service rates. The Branch has a clerical and administrative staff of thirty-one employees and an inspection staff of twenty-six for a total staff complement of fifty-seven. There are approximately 23,000 meter accounts and over 104,000 flat rate accounts. During a one year period inspectors will read the meter accounts three times (one quarterly bill is estimated) and make approximately 76,000 calls on the City's flat rate water customers. Of the 76,000 calls, half of them are regular inspections and the other half are calls due to plumbing and/or ownership changes. All of the flat rate accounts are inspected at least once in every three years. A small portion of the flat rate inspections result in additional revenues for the Water Works Operation. In 1982 approximately $23,700 (less than one tenth of a percent) was added to water revenue as a result of the addition of flat rate factors.

The Cashier's Branch of the Finance Department receives, receipts, records and banks the revenues of the Water Works Operation. The Operation's financial statements are prepared by the Accounting Division which is also part of the Finance

Department. The Water Revenue Branch is charged for each of these services through a General Administration fee. This charge has been set in 1983 at 25% of the basic Water Revenue Branch budget.

The Department of Public Works of the City of Toronto is responsible for the maintenance and development of the water distribution system.

Approximately 135 full time staff are involved in water supply and related activities. Their program can be broken down into three principal categories. These are system improvement, leak detection and a meter rehabilitation program.

The system improvement program is designed to maintain and upgrade the water distribution network on a rational basis. This program has succeeded in maintaining a constant supply of water and in reducing the probability of a major interruption in service.

The leak detection program, begun in 1968, has resulted in substantial savings to the City. The City is charged for all water pumped into its network by Metro and in turn charges its users for consumption. However, that amount of water lost in the distribution (known as main loss) is an unrecoverable cost to the City. Therefore as "main loss" is reduced, through the leak detection program, the ratepayers enjoy a concomitant savings in their bills. For example, between 1968 and 1977 (the last period for which complete figures are available), a total of $597,391 was

spent on leak detection and repair resulting in an estimated savings of over $2,920,000 to the City.

The meter maintenance program, also begun in 1968 is designed to enhance revenue by reducing the number of obsolete or defective meters. By eliminating these problems the Water Revenue Branch is able to accurately bill users for consumption and therefore reduce losses due to under-registration.

On the average for every one dollar received from the ratepayer five cents is spent by the Water Revenue Branch on the administration of the Water Works Operation and twenty-one cents is spent by the Department of Public Works on the maintenance and development of the system and seventy-four cents is paid to Metro for the purchase of water.

Ownership

The City of Toronto obtained passage of an Act by the Legislative Assembly of the Province of Ontario in 1872, known as "An act to authorize the Corporation of the City of Toronto to construct Water Works in the City of Toronto". (see Appendix, Exhibit "B") enabling them to take over the Water Works system which was privately owned by the Toronto Water Works Company.

The Flat Rate Factors

In 1873, different methods of billing in both Canada and the United States were reviewed by the City of Toronto. The

review led to the City instituting the method of flat rating in use at that time by other utilities, in conjunction with some experimental meters as used in the United States.

The first official set of flat rate factors for fixtures and charges was formulated and adopted by the City of Toronto in 1878. (See City Council Minutes of 1878, Pages 635 - 640, Appendix, Exhibit "C" and By-law No. 885, passed November 4th, 1878.)

Flat rate factors consist of the number of rooms, flats (businesses), fixtures and appliances taken into consideration in billing water consumed by a non-metered customer. The number of rooms in a dwelling, rooming house, institution, or business flats along with the number of water closets, sinks, laundry tubs, etc. in each of these premises are counted and rated and added together to form the basis of calculating a bill for a flat rate customer. Except for rooms or flats, all other factors either directly or indirectly have been specifically identified as a water utilizing appliance or fixture. Rooms and flats are not water consuming appliances or fixtures but are considered a reasonable indication of the water using potential of the premises. This is discussed later in the report.

A flat rate has been established for each water utilizing appliance or fixture based on an estimated average customer's consumption. There have been many changes over the years to some

of the factors used, due to obsolescence or the introduction of new water consuming appliances or fixtures. Charges for the various factors, however, have been altered only on a percentage basis to increase revenues as required. Rates for new factors are set at a dollar amount already established for an existing fixture believed to be using a similar amount of water.

At present there are three schedules of flat rate factors in use. Schedule "A" is a list of fourteen factors applicable to private dwellings and rooming houses. Schedule "B" is a list of thirteen factors applicable to commercial buildings. Schedule "C" is a list of twenty-six special factors which are in addition to those factors set out in Schedules "A" and B".

A synopsis of the different types of factors that have evolved since the earliest recorded data in 1878 is listed below in Table I:

FLAT RATE FACTORS Table I

Schedule "A"	Annual Charges 1983 $	1947 $	1918 $	1895 $	1878 $
Rooms in a dwelling - per room	4.90	0.65	0.65	0.50	1.00
Inmates	--	--	--	0.50	0.50
Rooms - Minimum Charge	14.38	2.00	2.00	3.00	--
Rooming House - per room	8.20	1.15	1.00	--	--
Basins	9.46	1.25	1.25	1.00	2.00
Baths	9.46	1.25	1.25	2.50	5.00
Showers - Not attached to bathtub, each	9.46	1.25	--	--	--
Sinks	9.46	1.25	1.25	1.00	2.00
Urinals - self-acting	11.26	1.50	1.50	2.50	5.00
Urinals - not self-acting	46.70	6.25	6.25	5.00	4.00
Water Closets - self-acting	15.10	2.00	2.00	2.50	5.00
Water Closets - not self-acting	48.62	6.50	6.50	--	--
Laundry Tubs - pair	9.46	1.25	--	--	--
Laundry Tubs - single or additional	9.02	0.75	--	--	--
Washing Machines (laundry)	9.46	--	--	--	--

FLAT RATE FACTORS (Cont'd) Table I

Schedule "B"	Annual Charges 1983 $	1947 $	1918 $	1895 $	1878 $
Business Flats - each	15.10	2.00	2.00	1.50	--
Private Hospitals and similar buildings as listed in by-law - per room	8.60	1.15	1.00	--	--
Basins	18.80	2.50	2.50	1.50	3.00
Baths	18.80	2.50	2.50	5.00	10.00
Showers - Not attached to bathtub	18.80	2.50	--	--	--
Sinks	18.80	2.50	2.50	5.00	3.00
Urinals - self-acting	22.48	3.00	3.00	5.00	6.00
Urinals - not self-acting	93.50	12.50	12.50	--	--
Water Closets - self-acting	30.10	4.00	4.00	5.00	--
Water Closets - not self-acting	97.20	13.00	13.00	--	--
Laundry Tubs - pair	18.80	2.50	--	--	--
Laundry Tubs - single or additional	9.46	1.25	--	--	--
Washing Machines (laundry)	18.80	--	--	--	--

FLAT RATE FACTORS (Cont'd) Table I

Schedule "C"	Annual Charges 1983 $	1947 $	1918 $	1895 $	1878 $
Air Conditioning Equipment	--	2.00	--	--	--
Bakeries - per barrel of flour per day	11.24	1.50	1.50	2.50	5.00
Baptistries	6.38	0.85	--	--	--
Barber Shops/Beauty Parlours - per chair	9.46	1.25	1.25	2.00	4.00
Bars and Saloons	--	--	--	--	16.00
Churches - buildings used as a place of worship. One-third of Schedule "B" rates for each fixture in building.	1/3 rate	1/3 rate	1/3 rate	1/5 rate	--
Cows	--	--	--	0.50	1.00
Dental Fountains	46.70	6.25	--	--	--
Dishwashers - water powered	37.48	5.00	--	--	--
Distilleries - Where not metered, per barrel	--	--	--	--	0.10
Drinking Fountains	18.80	2.50	--	--	--
Dye Works	--	--	--	10.00	--
Fish Tanks	46.70	6.25	--	--	--

FLAT RATE FACTORS (Cont'd) Table I

Schedule "C" (Cont'd)	Annual Charges 1983 $	1947 $	1918 $	1895 $	1878 $
Forges, each	--	--	1.25	2.00	4.00
Fountains					
- 1/16" orifice or less, per season	30.08	4.00	4.00	5.00	10.00
- Other than above, per season	119.72	16.00	16.00	10.00	20.00
Greenhouses -					
- 500 sq. ft. or under	3.80	0.50	--	--	--
- Over 500 sq. ft and under 1,000 sq. ft.	5.62	0.75	--	--	--
- For every 1,000 sq. ft. additional or part thereof	1.92	0.25	--	--	--
Horses					
- For hire or commercial purpcses, each	15.10	2.00	1.25	1.50	--
- For other purposes, each	9.46	1.25	2.00	1.50	--
Humidifiers	15.10	--	--	--	--
Laundry - Each tub	9.52	1.25	1.25	1.00	2.00
- 1 - 3 hands (employees)	37.68	5.00	5.00	7.50	--
- 4 - 5 hands	60.12	8.00	8.00	12.50	--
- 6 - 7 hands	82.70	11.00	11.00	17.50	--
- 8 or more hands	97.76	13.00	13.00	20.00	--

FLAT RATE FACTORS (Cont'd) Table I

Schedule "C" (Cont'd)	Annual Charges 1983 $	1947 $	1918 $	1895 $	1878 $
Materials					
- Bricks, per 1,000 (or equivalent masonry)	0.30	0.03	0.03	--	--
- Plastering per 1,000 sq. yards	11.30	1.50	1.50	5.00	5.00
- Concrete, per cubic yd.	0.78	0.05	--	--	--
- Minimum	3.80	0.50	0.50	0.50	--
Milk Vats	--	--	1.50	2.00	--
Photo Tanks	18.88	2.50	--	--	--
Potato Peelers	37.68	5.00	--	--	--
Private Houses -					
- Unoccupied or occupied only by caretaker and with his or her family.	80.66	13.30	10.50	--	--
Refrigerators					
- Connected to water	--	--	3.00	--	--
Restaurants - Meals, each	1.92	0.25	0.35	0.15	--
Sprinkling Lawns	--	--	1.00	1.25	4.00
Steam Engines -					
Per horsepower	13.16	1.75	1.75	3.50	7.00
Other Engines -					
Per horsepower	11.30	1.50	--	--	--

FLAT RATE FACTORS (Cont'd) Table I

Schedule "C" (Cont'd)	Annual Charges 1983 $	1947 $	1918 $	1895 $	1878 $
Syphons - not self-acting	94.00	12.50	--	--	--
Trenches					
- 6 ft. deep and under (for every 100 ft.)	3.80	0.50	0.50	0.75	--
- Over 6 ft. deep (for every 100 ft.)	7.48	1.00	1.00	1.50	--
Vegetable Sprays	11.30	1.50	--	--	--
Washing Machine - water powered	46.78	6.25	6.25	--	--
Washing Windows	--	--	1.25	2.00	4.00
Wash Racks	93.52	12.50	--	--	--

This table indicates that the number of flat rate factors used by the City of Toronto for billing purposes has more than doubled over the years. Twenty-five factors were introduced in 1878 and fifty-three factors are in use today. Of the twenty-five factors used in 1878, nineteen remain in use today. A total of forty-four factors have been added throughout the years, and six have been deleted. The factors for inmates, bars and saloons, cows, forges, lawn sprinkling, and window washing were deleted.

New factors such as showers, water closets, laundry tubs, washing machines, etc., were added as new water consuming appliances were invented and came into common use.

Rooms, Flats and Inmates

The City of Toronto's current waterworks by-law defines a room as being "each room in the premises except bathrooms, and includes any recreation room, summer kitchen, kitchenette, breakfast room, conservatory, sun room, enclosed verandah and enclosed back porch having an area of fifty square feet or more." A different charge is made for rooms in a dwelling, rooming house, institution and rooms in a business flat, which is defined in the By-law as "each floor or part thereof of a place of business or a place of business separately occupied on one floor of a building".

No doubt, the original intent of including rooms as a flat rate water billing factor was to charge on an equitable basis the expenses of the Waterworks Operations. The owner of a larger dwelling with more rooms would pay more for water than a smaller dwelling with fewer rooms regardless of actual water consumption. Over the years, various factors have been deleted or added to the original 1878 list, however rooms have been retained as a factor. While it is obvious that rooms, in and of themselves, do not consume water it is felt that they are an indication of the potential water consumption of a household. To use the number of rooms as one of a set of factors serves also to ameliorate

whatever inequity might occur in specific circumstances, if only fixtures were taken into account.

The size of a property, as measured by the number of rooms, is a representation of the potential number of occupants and therefore the possible level of consumption. A more accurate measure would be the number of residents, yet the high degree of mobility that characterizes today's society make the use of this option untenable.

Inmates as a flat rate water billing factor was deleted in the year 1918 and replaced by a rooming house factor. It is believed that as the City of Toronto grew and individuals moved more frequently from one residence to another, it became extremely difficult to keep an accurate count of the number of persons or inmates living in a particular residence. At present a flat rate charge is made for each room in a rooming house.

In 1982, rooms as a flat rate water billing factor accounted for 33.26 percent of the total flat rate water billing revenue, excluding some minor charges for fire protection, estimates for lawn watering, allowances for demolitions and building material water revenue. Table II as follows, shows the various types of rooms which are charged as a flat rate factor, the revenues generated and percentage of each to the total.

1983 PROJECTED REVENUES GENERATED BY FLAT RATE FACTORS

Table II

FACTORS	REVENUES GENERATED $	TOTAL REVENUES %
Schedule A		
(1) Rooms - Dwelling	3,723,288	29.80
- Rooming House	312,322	2.50
	4,035,610	32.30
Water Closets	2,853,462	22.80
(2) All Other Factors	5,135,380	41.10
	12,024,452	96.20
Schedule B		
(1) Rooms - Business Flats	115,228	00.92
- Institution	5,857	00.04
	121,085	00.96
Water Closets	160,673	1.29
(2) All Other Factors	159,370	1.28
	441,128	3.53
Schedule C		
(2) All Factors	33,242	0.27
	12,498,822	100.00

Notes:

(1) The total percentage of revenue generated by room is 33.26.

(2) The category of "All Other Factors" is examined in detail in Section 6.2 Flat Rate Factors.

Inspection of Premises

Inspections for flat rate purposes are made on a house to house basis at regular intervals. This type of inspection has a three fold purpose;

1) First to uncover unreported changes in plumbing or nature of occupancy which may effect the rating;

2) Second as a means of controlling water waste due to leaking fixtures, water closets, sinks, excessive use of lawn watering devices, etc.;

3) Third to insure that records of properties are current and accurate.

Flat rate inspections are carried out automatically when the staff is informed by notification from a lawyer, the ratepayer or the Buildings Department of any changes in occupancy; on reports that a building or plumbing permit has been issued for the purpose of replacing, repairing, adding fixtures, or extending the existing building. In addition inspections are carried out when any new building has been erected that is non-commercial, residential or an apartment building smaller than a fourplex.

Billing

A bill for a flat rate account is arrived at by discovering all the water consuming factors (fixtures and rooms)

in the building and multiplying each one by the gross semi-annual unit charge for that factor (fixture).

Added to the bill is a 15% sewage service charge to maintain and improve the City's sewer system. Prior to the year 1967, the cost of maintenance and improvements to the City's sewer system was a tax supported service. City Council, in an effort to achieve a more equitable apportionment of the cost involved in maintaining and developing the City's sewer system implemented the sewer service charge. The surcharge represents the ratepayer's share of the annual cost based on their water consumption and their resultant use of the sewer system.

The total of these two charges equals the gross billing charge. A ten percent discount for prompt payment is deducted from the gross amount to arrive at the net amount which must be paid on or before the date stipulated on the invoice. These accounts are payable in advance of actual water usage whereas meter accounts are billed quarterly after the water has been consumed.

Capital Improvements

Improvements to the water distribution system have been financed out of current funds. No debenturing for the rehabilitation of watermains has been undertaken since 1953. Actual capital expenditures made over the last five years range from one million dollars to one million five hundred thousand

dollars per year. It is not anticipated that any major capital expenditures will be required in the future as long as the present program of rehabilitation continues at about the present level.

Summary

As indicated above, a flat rate system was formalized in 1878. This action was taken primarily because meters were neither reliable nor accurate, and the expense of installing and maintaining the meters was too costly. Meter types and methods of automatic meter reading have improved over the years and as new residential development is undertaken in the City of Toronto, the number of flat rate accounts as a percentage to the total number of water accounts is reduced accordingly. Periodic reviews are made of the present flat rate structure on the validity and practicability of the City's flat rate policy.

4. EVALUATION CRITERIA

4. Introduction

The following section is a discussion of the five areas considered to be the most important in evaluating a water billing system. The analysis centers around the economy, efficiency, effectiveness and the social value of a billing program and its impact both on the civic administration and the ratepayer.

For the purposes of this report the staff committee has identified five major areas of concern:

1) Equity

2) Financial considerations

3) Administrative concerns

4) Conservation

5) Intelligibility to the consumer

Each of these topics are addressed in the following pages with a view to giving the reader a good understanding of the impact of these critical areas on the provision and billing of this essential resource.

The section on equity examines the manner in which the City of Toronto monitors the relationship not only between the two classes of consumers (metered and flat rate) but also, with respect to flat rate customers, the degree of equity within this category.

Under the heading of financial consideration the relative merits of meter and flat rate billing are discussed. The primary focus of this section is on the revenue generated under each of these billing systems and their consequent impact on the finances of the Water Works Operation.

The discussion of administrative concerns illustrates the impact of such areas as the organizational structure and the administrative support systems on the efficiency of the Water Works Operation. The range of customer services offered is also described.

While the City enjoys an almost inexhaustable supply of water, from Lake Ontario, conservation is none the less an important issue. An examination of the effect of conservation efforts as they relate to the metered or flat rate systems is therefore included.

The final criteria is intelligibility. As a public utility it is incumbent upon us to provide our ratepayers with a clear and comprehensible billing system. This section discussed the billing system from this perspective.

It is these five criteria that are used later in this report to evaluate the type of flat rate system used in the City as compared to other systems in common use and to evaluate the relative benefits of flat rate and meter billing.

4. EVALUATION CRITERIA

4.1 Equity

The primary basis upon which the City of Toronto measures equity between its two types of ratepayers is by analysing the spread between percentage of consumption as compared to percentage of revenue allocated to each group of users. That is to say, if metered accounts consume 70% of the total amount of water then they should generate 70% of the revenue, and so on.

The Branches of the Finance Department and of the Department of Public Works responsible for water revenue administration and water supply, constantly check billing and consumption of water to ensure that both classes of customers are being charged as equitably and as fairly as possible.

Main Loss

Equity between meter and flat rate customers can only be estimated in the City of Toronto, as accurate figures can not be acquired with respect to actual consumption by flat rate water services for a specific period of time. However, a fully metered municipality can record the amount of water that is pumped into its mains from it's source of supply. Over the same time span, a total of all water sold by metered measurement is obtained. By deducting the amount of water sold from the total supplied at the

source, a definite figure of "Unaccounted Water" can be derived. "Unaccounted Water" is water that was pumped into the water system but was not sold. This is commonly known as "Main Loss".

No revenue is derived from unaccounted water, but the costs for pumping this water are real and, therefore, must be incorporated into water rates.

No system of checking main loss will prove accurate where water rates are not charged by meter measurements, as the actual amount of water used by flat rate customers is unknown. In 1982, the City of Toronto purchased 35,724,441,000 gallons of water. Assuming a main loss of 11%, (as estimated by the Department of Public Works), actual consumption by customers amounted to 31,794,752,000 gallons. Consumption charged by meter measurement was 23,430,913,000 gallons. The difference of 8,363,839,000 gallons, is estimated to be the consumption by flat rate customers. Revenue of $12,225,178.62 was derived from flat rate customers, an estimated charge of $1.46 per thousand gallons is the result. A charge of $1.55 per thousand gallons was the 1982 rate charged to meter customers, making it appear that flat rate consumers were paying .9 cents less per thousand gallons than metered consumers.

The following statement illustrates the calculation of the disparity in rates between these two classes of users:

STATEMENT OF DISPARITIES IN RATES BETWEEN METERED AND NON-METERED CUSTOMERS

(1)	Total Water Purchased (gal.)		35,724,441,000
	Main Loss (11%) (gal.)	-	3,929,689,000
			31,794,752,000
	Meter Consumption (Actual)	-	23,430,913,000
	Flat Rate Consumption (Estimated)		8,363,839,000
(2)	Flat Rate Revenue		$12,225,178.62
	Flat Rate Consumption		8,363,839,000
	Flat Rate Cost/Gallon	=	$1.46
(3)	Metered Water Rate/1000 Gallons		$1.55
	Flat Rate Water Rate/1000 Gallons		$1.46
	Disparity		$0.09

When setting rates it is not possible to predict exactly the total volume of water that will be consumed by flat rate customers in the following year. However, the disparity in rates and the ratios of total payments between flat rate and metered customers are reviewed each year and adjusted in the following year when setting rates.

Equity Calculation

The use of flat rate factors as a means of estimating water consumptions, without the expense of installing and maintaining meters, has meant that the City had to rely on other

techniques to ensure equitable billing. It is believed that the system used by the City of Toronto to measure consumption is equitable as disparities between the revenues from meter and flat rate customers, as compared to the volume of water used by each, is very low. A table showing the disparity over an eleven year period between the revenues from meter and flat rate customers, as compared to the volume of water used by each follows:

ANNUAL DISPARITIES IN
WATER CONSUMPTIONS AND REVENUES
FOR THE YEARS 1972 TO 1982

Table III

	CONSUMPTION		REVENUE		
YEAR	FLAT RATE %	METERED %	FLAT RATE %	METERED %	DISPARITY %
1972	33.6	66.4	31.8	68.2	1.8
1973	31.9	68.1	30.8	69.2	1.1
1974	30.3	69.7	30.8	69.2	0.5
1975	31.0	69.0	30.6	69.4	0.4
1976	29.3	70.7	32.0	68.0	2.7
1977	24.2	75.8	32.1	67.9	7.9
1978	23.0	77.0	32.4	67.6	9.4
1979	23.6	77.4	32.7	67.3	9.1
1980	25.1	74.9	30.3	69.7	5.2
1981	25.1	74.9	26.7	73.3	1.6
1982	26.3	73.7	27.1	72.9	0.8

Any disparity between the two classes can be adjusted by deferring a rate increase in either class for one or two years. For example in order to equalize the larger disparities of the years 1977, 1978 and 1979 of 7.9%, 9.4% and 9.1% respectively, no

increases in the flat rate charges were made in the years 1980 and 1981. This action reduced the disparity between the two classes and a close watch is kept over the revenues produced and the consumption used between the two classes of water consumers. Although seventy percent of the City's water consumers are on flat rate billing, the flat rate customers consume only thirty percent of the water sold. This can be attributed to the fact that the most conspicuous consumers, such as large office and residential complexes and industrial users are all metered.

Metro Comparison of Rate

Although Metropolitan Toronto sells water to all the Boroughs and Cities at the same price, each area municipality must set retail rates at a price sufficient to cover all its fixed and variable costs. Each municipality is different from the others as to size and variety of customers served. As a result each area municipality sells water at a different rate, as shown in Table IV.

The disparity between the percentage of main loss shown in Table IV is a function of two variables. The first, and perhaps the most important is the age of the distribution network. As Toronto's system is the oldest it follows that it would experience the most severe loss. The second item to consider is the distribution of accounts between meters and flat rate. Once again, Toronto has the largest number of flat rate users and as

such must estimate its main loss. In the other Metro municipalities, the vast majority of accounts are metered and therefore these municipalities can maintain a much closer watch over distribution and loss.

METRO TORONTO METERED RATES

Table IV

MUNICIPALITY	1983 RETAIL CHARGES Per 1000 gallons	ESTIMATED MAIN LOSS %
Scarborough	$ 1.53	7.0
Toronto	$ 1.63	11.0
Etobicoke	$ 1.70	3.0
North York	$ 1.74	3.7
York	$ 1.86	*N/A
East York	$ 1.93	7.0

* Not available.

Note:

The City of Toronto's estimated flat rate charge is $1.46/1,000 gallons.

Disparities in Charges

Customers paying for water on a flat rate basis are, as far as water consumption is concerned, on an honour system with regard to reasonable use. Some degree of variation may exist among flat rate consumers. Leaks and excessive water usage are brought to the attention of customers during regular inspections by the staff, and water energy conservation programs are encouraged in the City of Toronto. Excessive use of water does not result in a higher bill. This fact may tend to produce inequities of charges amongst flat rate consumers. It is also an unfortunate fact that in two houses of similar size with the same water using conveniences, a person living alone pays the same water rate as a family of six persons. It is quite obvious that water consumption in the two houses must be different, but because the flat rate water factors are the same in both houses, the charges are similar.

In order to control such inequities, a provision was added to the existing by-law in 1947 whereby a person could apply to have a water meter placed on the service supplying their premises to provide for payment of water charges by meter measurement. (It is not, however, feasible for a metered customer to revert to flat rates.) There is no specific installation charge to the ratepayer who requests the installation of a meter. The cost of supplying and maintaining a meter is covered through a

meter rental charge which varies depending on the size of the meter and is applied to the quarterly bill.

Summary

In the final analysis as no substantive proof to the contrary exists, it is reasonable to assume that the flat rate system of billing for water in the City of Toronto is fair and equitable, as an overall balance between the two classes of users does exist. It is interesting to note that both the City of Toronto's meter and flat rate charge per 1,000 gallons are the second lowest in Metro and further, that the disparity between the two rates or classes or customers is minor.

4. EVALUATION CRITERIA

4.2 Financial Considerations

In considering the relative financial benefits to the City of the various methods of the accounting for and the billing of water the reader must be aware that regardless of the system in place there are certain costs that will not change.

Ranked in order of the amount disbursed these items are:

1. Purchase of water from Metro.
2. Maintenance and development of the water distribution network.
3. Department of Public Works administrative costs.

Cost and Revenue Considerations

The mix of flat rate and meter accounts has, over the years, served the City well. The fact that Toronto is an old city and had an established water works system early in its history, before metering was reliable, has left us the legacy of flat rate accounts. The conversion to meters, especially in older buildings, is an expensive proposition. This results from the fact that in many cases extensive plumbing renovations are required before a meter can be installed, the cost of which must

be covered by the ratepayer. With the flat rate accounts generating only approximately 30% of revenue it has never been considered essential to undertake a wholesale change over.

This is borne out by the fact that the City has been able to maintain, develop and administer the water distribution network without resorting to debentures since 1953 while at the same time maintaining the second lowest water rates in Metro.

For the purposes of this section the key element is the distribution of costs and the effects on revenue as they relate to either meter or flat rate billing.

Costs

The operating costs of the utility are affected by the distribution of accounts between flat rate and meter consumers. It is generally accepted that the flat rate system is less expensive to administer because fewer regular inspections are required and therefore the associated administrative costs are lower. Under the City's flat rate program a property is inspected on the average once every three years (not including unscheduled inspections due to changes in occupancy, etc.) and is billed twice each year, as compared to the meter customers whose meters are read at least three times per year and billed four times annually.

Each year approximately the same number of man-days are devoted to meter reading and flat rate inspections yet for every one meter account there are four and a half flat rate accounts.

Thus under the meter program three inspections yield four bills over a one year period, while with flat rates, one inspection generates six bills over a three year period.

There is an additional cost for the ratepayer under the meter system of the meters themselves. The Water Works By-law provides for a meter rental charge which, over time, covers the cost of the equipment as well as the installation and maintenance charges.

Revenue Considerations

The City's flat rate customers are billed semi-annually in advance while its metered customers are billed quarterly on actual consumption basis and after the fact. In 1982, the revenues received in advance by the City were invested to produce more than $1 million in short-term investment interest earnings which went to reduce the City's water rates. Assuming that the City's leak detection program is effective and that repairs are made immediately, there is a belief by many administrators that the flat rate system can be less expensive to operate than the metered system.

Meters would increase the accuracy of individual bills, because with the exception of inspections, which occur relatively infrequently, it is not known for flat rate consumers if a leak exists or if water is being wasted. As such the ratepayers as a group may be subsidizing such customers by virtue of the fact that the City is purchasing the water from Metro yet not collecting for it from them. Where consumption is metered this situation does not occur.

In addition to billing for actual consumption the meter program enhances revenue through its minimum billing provision. Regardless of consumption all customers are billed for the equivalent 9,000 gallons of water for each three month period even if they use less than this amount. This is done not to increase revenues but rather to cover the fixed costs of supplying any volume of water. As mentioned this is not designed to increase revenues yet as compared to the flat rate customer where no control exists this is an ancillary effect of the meter system, (that is to say, where water is billed on meter measurement).

Funds are also generated via a fee of $7.50 for a written statement of account. Any information given over the telephone is provided free of charge, but the cost of written statements is covered by the above. In 1981 and 1982 a total of 14,962 statements were provided generating approximately $112,200. This is one of a variety of fee for service charges used to help offset water rate increases.

The current system provides for the semi-annual billing of flat rate accounts in advance. As part of management's ongoing efforts to improve revenues different billing intervals have been examined. It has been established that the current semi-annual in advance billing program is not only cost effective but also that it optimizes the Department's cash flow.

Rate Stabilization Reserve Fund

The Rate Stabilization Reserve Fund is the mechanism through which surplus revenues are held to offset any deficits that may be incurred in the operation of the utility. 1983 provides a good example of the benefit of this fund. A price increase of 11.15% was levied on the City for the purchase of water from Metro. The City however, in an effort to abide by the 1982 Provincial Government's restraint program increased retail rates only 5 percent. The Rate Stabilization Reserve Fund will be used to make up for a short period the short fall in revenue that will result.

Summary

A balance exists between flat rate and meter accounts in that while one generates more accurate bills the other is less expensive to administer. Further to this, the extraordinary expense (estimated to be $14 million) of establishing a fully metered system seems to, at this time, negate it's advantages.

The utility operates on a break even basis and is succeeding in covering all its costs under the current flat rate/meter combination, without resort to debenturing. Price increases have been necessitated by the wholesale price increase from Metro and general increases in wage rates or the costs of goods and services. This indicates that the system is meeting its prime objective, that is the provision of sufficient quantities of potable water at the lowest possible rate.

The system also seeks to establish a balance between rates for metered and non-metered users. Section 4.1 examined this in detail. Suffice it to say, for the purposes of this section, that equity between these two classes of consumer does exist and that each seems to be carrying their fair share of the expenses. One example of this is the very small disparity between the billing rate charged to the flat rate and metered users, of $1.46 and $1.55 per thousand gallons respectively, when compared to the relative volumes of water consumed by each class of user.

As indicated previously, the ratios of costs and consumption between the two classes of customers are reviewed each year before the rates are set. The rates are adjusted in accordance with the best projections that can be made for consumptions in the following year to reduce or eliminate any disparity.

4. EVALUATION CRITERIA

4.3 Administrative Concerns

This section illustrates the range of administrative concerns as they relate to the operation of the Water Revenue Branch. The discussion will cover such areas as the organizational structure, administrative support systems, service to the public and the legal basis upon which the Branch bases its operations.

Organizational Structure

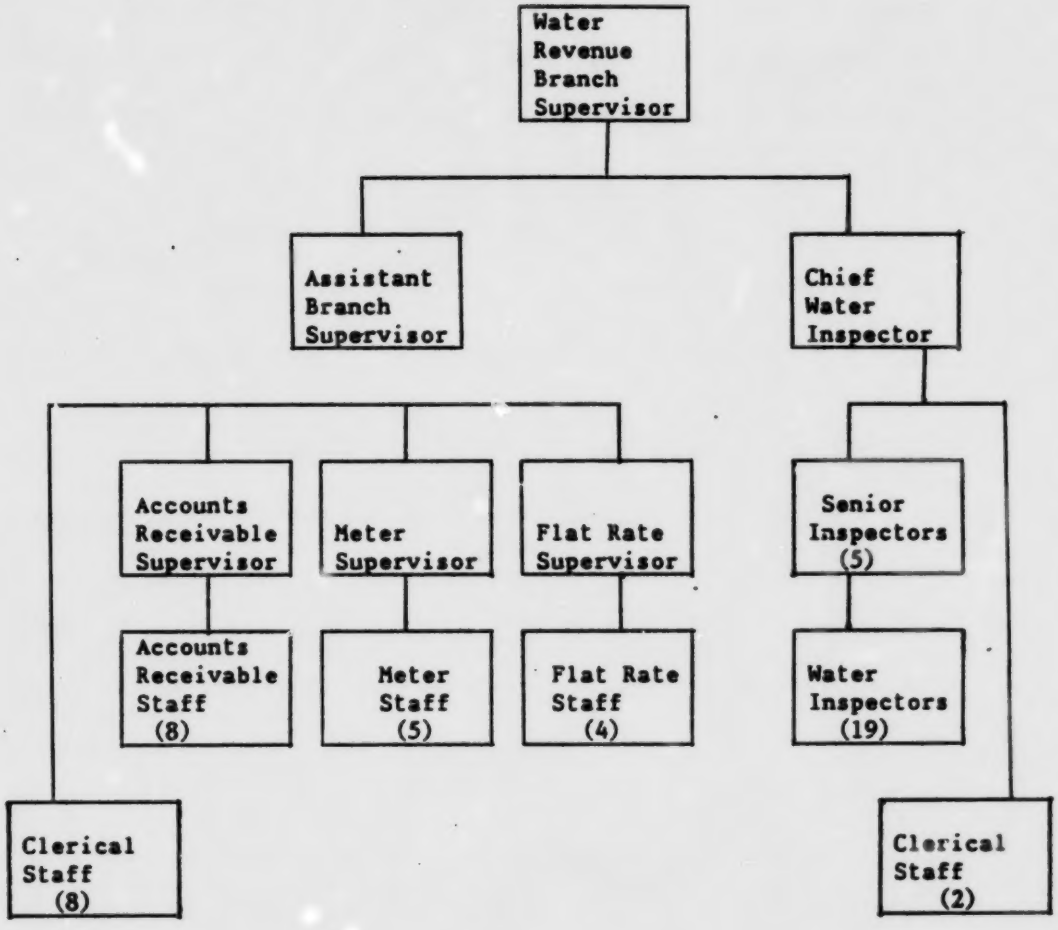
As noted in Section III of this report the Water Revenue Branch consists of a staff complement of fifty-seven positions operating under the auspices of the Finance Department. The Branch is managed by a Branch Supervisor and is divided into two units, Administrative and Inspection.

The Administrative Unit is supervised by an Assistant Branch Supervisor and is broken down into four sub-units. These are the Meter, Flat Rate, Accounts Receivable and Clerical Units. Each of these units is controlled by a Unit Supervisor or in the case of the Clerical Unit, a Senior Clerk, who reports to the Assistant Branch Supervisor.

The Inspection Unit is controlled by the Chief Inspector who reports to the Branch Supervisor. Under the Chief Inspector are five Senior Inspectors who direct twenty Inspectors. (Refer to the Organization Chart on the following page).

WATER REVENUE BRANCH ORGANIZATION CHART

Table V



Summary:

Water Revenue Branch Supervisor	1
Inspection Staff	27
Administrative Staff	29
	57

MNF/la

May 2, 1983

Administrative Support

A General Administration Charge of 25% on its operating budget is applied by the City to the Water Revenue Branch to cover the services it purchases from the Finance and other Departments. These funds cover City expenses as incurred by the Cashiers Branch who process the Water Revenue Branch's receipts, and the other areas of the Finance Department who aid in administrative affairs of the Water Revenue Branch matters. It is generally accepted that to apply a charge to the Water Works Operation for these services is appropriate, however, there is some question as to the manner in which this fee is calculated and the way it is credited in the City's books. Water Revenue Branch management feels that a more appropriate method would be to calculate the charge based on the actual cost of the work done by staff not carried on the Water Revenue Branch payroll and calculate such charges as a percentage of salary plus fringe benefits. In addition, the real cost of such items as rental of space (including light, heat and water) and telephone could be calculated and credited to the appropriate Departments. At present the total administrative charge is credited to the Finance Department's budget. An ongoing dialogue amongst the departments involved is seeking to resolve this matter.

Information Systems

A constant flow of information is necessary to assist Management in the planning and controlling of the Water Works Operations. Water rates are designed to cover costs, such as capital expenditures for new works, maintenance of the present water system and administrative expenses. This information must therefore be accurate and accessible on a continuing basis.

Billing information is obtained from the Water Revenue Inspection staff. These employees are constantly acquiring facts used to generate revenue, either in the form of reading water meters or inspecting properties being billed on a flat rate basis.

Relevant billing data gained by inspectors is entered into a computer by means of a telephone link between the Water Revenue Branch and the main computer. Output, either in the form of printed matter or available on twelve video display terminals in the Branch, is analysed by office staff and approved for bills to be produced. A series of checks are built into the system to identify discrepancies. Should a problem appear, the billing staff requests further information from the Inspection Unit in order to ensure that a proper bill is issued. These internal controls are a part of Management's continuing efforts to provide the best service at the lowest possible cost.

Administration must keep abreast of new technology and advance with the times. Handwritten bills and individual entries

into ledgers have been replaced by computer billing and accounting. Inspections are now being made with the aid of hand-held terminals (H.H.T.'s) into which data can be entered and then transferred directly on a daily basis, into a computer by means of a telephone link.

There are certain operational problems that continue to be of concern to the Water Revenue Branch. One of the most significant is the issue of gaining access to perform inspections or read the meters. Section 28 of the Water Works By-law provides for the right of access to perform these functions yet two factors have a bearing on this. The first and most serious is the prevalence of two working individuals per household, which results in an Inspector often being unable to gain access because no one is home.

The second concern is the philosophical issue of invasion of privacy. While the public does not generally consider the inspection process as an invasion of their privacy and indeed some 400 ratepayers have provided the Water Revenue Branch with keys so that access may be gained even in their absence, it is incumbent upon the Department to mitigate any such problems and be sensitive to ratepayers concerns in this area. One of the remedies that could be used in greater numbers, by the Branch, is an attachment that can be linked to a water meter to record the meter reading on a receptacle located outside a building. The installation of

these remote readers eliminates the worst problem for water utilities, gaining access to read meters.

The technological advancements highlighted above aid the Water Revenue Branch in its quest for efficiency, yet there continue to be problems that must be overcome. For example, H.H.T.'s now used by the Inspectors to record the reading can lose the information that has been entered into them should the batteries fail due to cold weather, from a sudden shock resulting from a fall or the terminal being dropped. Statistically, such occurrences have so far not transpired more than once a year per man. However, even this low rate of incidence is unacceptable, in the staff's opinion, when it could result in the loss of not just part of, but a complete days work. As a result, not only do the Inspectors enter their reading in the H.H.T.'s but also write the information on daily route sheets. This is clearly a time consuming duplication of work. Members of the Water Revenue Branch and the supplier are currently working to resolve this problem.

The Customer Information Control System (C.I.C.S.) implemented in the Water Revenue Branch in 1979 has aided in the processing of information. This is an "on-line" inter-active system that permits updating of the water files directly from the terminals in any one of the Units in the Water Revenue Branch. At approximately the same time a new system of manually transferring water arrears to the tax roll for collection purposes was

initiated. Prior to the implementation of this program, part of the inspection staff's time was spent making collections. The new system automatically transfers water arrears to the tax rolls thereby alleviating the need for the Accounts Receivable section to prepare the data and the Inspection Unit from collecting the overdue amounts. As with any new system, there were significant problems during the installation resulting in major increases in overtime in 1979 and 1980. This began to reverse itself in 1981 and then was reduced more than ten fold in 1982.

WATER REVENUE BRANCH
5 YEAR OVERTIME HISTORY

Table VI

Year	Hours	Amount $
1978	234.0	2,843
* 1979	950.5	12,542
1980	2,029.0	33,840
1981	1,795.0	32,100
** 1982	177.0	4,182

* The C.I.C.S. system and the manual transfer of arrears to tax were implemented in the last quarter of 1979.

** Transfer of arrears to tax was computerized.

These systems have their most significant impact in the Accounts Receivable Unit. It is anticipated that over the course of the next few years that staff reduction in this area may be possible. On the other hand as the City changes over more flat rate accounts to meters the Meter Unit's workload continues to grow. As such it is suggested that as the Accounts Receivable Unit becomes overstaffed that these individuals may be transferred across to the Meter Billing Unit.

Service to the Public

As with any public utility a major part of the Water Revenue Branch's responsibility is to provide the public with information that may assist them in understanding how their bill is computed. The Branch replies to all inquiries or complaints received. Most of the systems in place are designed to meet this commitment.

The Water Revenue Branch and the Department of Public Works provide a variety of services to the public. For example, quarterly meter consumption is monitored so that when a customer's consumption shows a dramatic increase or decrease an inspector is dispatched to assist the ratepayer in discovering the cause of the change. In this way not only do we help the customer keep water costs down but also encourage conservation. The Department of Public Works provides the public with 24 hour emergency service. These fully equipped radio dispatched crews are available to deal with supply problems at any time. In addition to these services a variety of notices, flyers and bill inserts are prepared from time to time to keep the public informed about the issues of the day as they relate to water service and supply.

The frequent disruptions in postal service in the 1970's precipitated the development of a comprehensive contingency plan for the delivery of municipal bills. This program was developed

to provide our ratepayers with their bills in ample time to take advantage of its discount provisions.

In 1982 the Water Revenue Branch received in the area of 70,500 phone calls, 6,650 enquiries at the reception desk and mailed out 29,650 letters not including the regular issuing of bills. In addition to this, in excess of 188,000 changes were made to the account information base.

The above figures provide the reader with a good indication of the value of the C.I.C.S. and other systems as they relate to our effort to provide fast and efficient service to our ratepayers.

Security

The importance of staff to the system cannot be over-emphasized, but, because of their importance, management must consider the possibility of corruption. Steps are taken to prevent inappropriate action by both inspection and office staff through a variety of internal procedures ranging from individual computer security numbers to ensuring that no Inspector goes over the same route twice in succession.

Computer security access codes provide an audit trail that enables management to identify a staff member who inadvertantly or intentionally creates a problem in the information base. Each day the Unit Supervisors are provided with

a list of all those transactions that required security entrance to the computer. In this way all transactions can be verified with respect to the individual making the entry and the nature of the entry itself. In addition to internal precautions, the Water Works Operation accounts are scrutinized by members of the Audit Department.

Legal Basis of Operation

The Water Works Operation of the City of Toronto has been municipally owned since the passage of the Water Works Act of the City of Toronto, 35 Victoria Chapter 79 Ontario in 1872. Two other pieces of legislation also have bearing on the operation. These are the Public Utilities Act, R.S.O. 1980 Chapter 423 and the City's own Water Works By-Law 102-67. In recent years the Public Utilities Act has superceded the earlier Water Works Act in all areas of jurisdiction, although the latter has never been repealed.

One of the tasks of the Water Revenue Branch is to implement such directives and legislation as they relate to the operation of the Water Works system.

Summary

The foregoing section has identified some of the major areas of administrative concerns. By maintaining open lines of communication between all levels of the organization problems are

resolved before they can seriously effect the efficient operation of the Branch. Many of the concerns and problems experienced in the City of Toronto, are experienced by the other water works operations in Metro. In an effort to share common solutions and exchange ideas a Metro Water Administrators Association was established, the first meeting of which was held in the spring of 1980. These semi-annual meetings explore a wide range of topics such as unaccounted for water, new technologies, Metro rates, metric conversion, new legislation and a whole host of other areas.

Ongoing examinations of the Water Works By-law for clarity of meaning and intent are of great importance to the effective operation of the Water Revenue Branch. If situations arise that are not fully covered by the By-law, wording changes and deletions of outdated items are made or new sections are added after consultation with the City Solicitor and approval by Council. The current review of flat rate factors reflects these concerns. A list of recommended changes to the Water Works By-law 102-67 can be found in Section 6.2, Table X.

4. EVALUATION CRITERIA

4.4 Conservation

The traditional attitude of the general public that our supplies of natural resources are almost inexhaustable has led to little real concern for conservation of water. Most people think that water conservation is an emergency procedure to be practiced only during periods of shortages. This impression is probably due to the reliable and copious supplies of good water at reasonable cost available at the present time in the City of Toronto. The relatively low cost is conducive to the more or less unrestrained use of water. Water costs are perceived as one of the few remaining bargains.

The fact that we have an ample supply of water at the present time, does not mean we are immune to a possible shortage from one cause or another. Severe storms on the lake could stir up debris that might block the intake pipe, electric supply shortage or shortage of chemicals for purification could also lead to supply problems.

Pricing mechanisms are used by some utilities to encourage conservation or conversly, to attract industry. The most common is a system known as "block-rate pricing".

Block-rate pricing is a method of retailing water at an escalating or decreasing price for each block or level used, that is "A" dollars for the first thousand gallons, "B" dollars for the second thousand gallons, "C" dollars for the third thousand gallons, etc.

The cost to the City from Metro for all water supplied to customers remains constant regardless of volume purchased. Therefore the institution of block-rate pricing by the City would result in meter rates having to be adjusted.

Between the years 1947 and 1959 the City of Toronto did charge for meter consumption on a block rate system. This system however was discontinued effective April 1, 1959 (Appendix Exhibit D). This action was taken because in that year Metro discontinued billing the respective Boroughs on this basis.

Decreasing block-rate prices could cause a greater use of water, as there would be very little incentive to repair leaks or practice conservation methods. This is because as a users' consumption increases the price of their water would decrease.

Escalating block-rates could be an incentive to large volume consumers to practice conservation, but enforced solutions to problems are often met with a high degree of animosity. For example, after decreasing "block-rates" were discontinued the City lost at least three major commercial ratepayers who were high volume water users for whom this system had been very beneficial.

While the City regrets the loss of these companies it was not feasible to continue a system where, according to the Board of Control report of March 16, 1959, "only ten ratepayers derived any benefit."

Level of Consumption

It is interesting to note that consumption of water in the City of Toronto has decreased since 1974 as the population has decreased. Statistics indicate however that the daily average consumption per capita has increased. This may be due in part to the growing tendency to have more natural greenery around the house and the inclusion of more water-using devices in the homes. It would seem that the relatively negligible financial implication to the consumer of increased water consumption can be considered as a major cause of the increase in per capita consumption.

The following table is provided to give the reader an indication of the pattern of growth in the City of Toronto.

CITY OF TORONTO
PATTERN OF GROWTH
1834 TO 1982

Table VII

YEAR	POPULATION	AREA
1834	9,252	8.7 sq. miles
1854	41,760	8.7 " "
1884	105,211	13.0 " "
1904	226,400	17.7 " "
1914	470,144	32.0 " "
1944	676,887	34.9 " "
1974	682,252	37.6 " "
1982	614,763	37.6 " "

Note: Between 1904 and 1914 the City of Toronto annexed the following:

Avenue Road	1905	Balmy Beach	1909
North Rosedale	1906	Dovercourt & Earlscourt	1910
Annex West of Avenue Rd.	1907	Melliwell Property	1912
Deer Park	1908	Montclair District	1912
Baldwin Estate	1908	North Toronto	1912
East Toronto	1908	Moore Park	1912
Wychwood and Bracondale	1909	Glebe Estate	1914
West Toronto	1909	Mount Pleasant Cemetary	1914
Midway	1909		

Municipal Water Conservation

The Department of Public Works is already involved in an extensive and continuous leak detection program whose purpose is conservation and reduction of revenue losses.

The Water Revenue Branch is also actively involved in a program of leak detection and control. During flat rate

inspections, all water using facilities are viewed by the inspector and any leakage is brought to the attention of the owner or occupant. A notice of repair is issued and followed up until repairs are effected. When their consumption rises substantially, customers on meters are notified by an inspector who aids them when possible to located the cause of the increase.

Summary

It is incumbent upon both Departments involved in the Water Works Operation to encourage conservation by undertaking and maintaining a continuous program of public education to promote a better understanding of the need to conserve, advancing the idea that conservation helps maintain low rates, and promoting socially acceptable and practical methods of achieving reductions in water use. This shared responsibility is being discharged diligently by both Departments.

4. EVALUATION CRITERIA

4.5 Intelligibility to Consumers

Under the present system, the City of Toronto issues the flat rate bills to the flat rate users on a semi-annual basis. This means the issue of approximately 104,000 bills spread over a six month period, or 208,000 flat rate bills per annum. The City is divided into five geographic areas and each area receives its bill in a different month. No regular bills are issued in either the month of June or December.

When the bills are received by the flat rate users, numerous telephone calls from customers seeking information on how a particular bill is computed, are received by the Flat Rate Unit. Some printed information is included on the reverse side of the flat rate bill, (method and location payments can be made) and additional information is readily given to any who enquire.

The flat rate schedule of factors as incorporated in the by-law runs to three full pages. As such, it has not been considered practical to send this to all of the 104,000 flat rate users. Not only would it be bulky in weight but it would contain considerable information that would be of no value to the average flat rate customer. By far the greatest number of flat rate customers are billed either as "dwelling house" or "rooming house"

users, plus fixtures. That is to say, they are billed from either Schedule "A" or "B" factors. However, some flat rate bills do contain all three schedules of factors. In fact, most consumers having Schedule "C" factors have factors from "A" or "B" as well. For example, in one building there may be both a residence calling for a dwelling house charge under Schedule A and a business flat charged under Schedule B, and a barber shop calling for the use of Schedule C factors. It is clear from the above example that to the uninitiated the billing system might be difficult to understand and could create confusion for the customer.

Some of the questions received from our flat rate customers are surprising and even disappointing. For instance, although the charges for lawn watering and private auto washing were discontinued more than thirty years ago, many flat rate cusomters believe they still exist. Many customers also think that inspectors count taps, where in fact, only fixtures are counted (i.e., sinks, baths, etc.). These, and other questions, are a clear indication that much of the information the public has is either incorrect or outdated.

The Water Revenue Branch makes every effort to clarify this to customers both over the telephone and at the counter. A brochure is being developed for inclusion with the water bills to provide additional information.

The Water Revenue Branch in conjunction with the Public Information and Communication Services Division of the City Clerk's Department is in the process of developing some basic information on a simple method of describing to our flat rate customers the manner in which their bill is calculated. It is hoped that this manner of educating the public will reduce the number of calls received and inform ratepayers of the method of how flat rate bills are calculated.

Summary

Misinformation exists among our customers with respect to the manner in which their bill is calculated. It is incumbent upon the Water Revenue Branch to do all that it can to rectify this situation. As such, the Branch has undertaken to develop an information package to be distributed to our flat rate users. In addition the staff of the Flat Rate Unit are trained to handle and solve inquiries received over the phones.

In short, the Water Revenue Branch recognized its responsibility to make its flat rate billing system more intelligible and is endeavouring to meet this commitment.

5. OTHER SYSTEMS

The American Water Works Association reveals in their 17th annual Water Works Digest on municipal water rates in Ontario that there are ten different flat rate methods of charging for water in Ontario. The ten flat rate billing methods can be segregated into five major categories as follows:

1. External Single Method of Factoring

- A flat rate per building.
- A flat rate per type of building.
- A flat rate per size of service.
  (i.e. the diameter of the pipe supplying the property with water)

2. Internal Single Method of Factoring

- By number of taps.
- By number of rooms.
- By number of fixtures.
- By number of persons.

3. Internal Double Method of Factoring

- By number of fixtures and persons.

4. Internal Multiple Method of Factoring

- By number of rooms, number of fixtures and the nature of occupancy. (Method used by the City of Toronto.)

5. Assessment Based Method

- By assessed value of non-metered property as compared to metered consumption on a property of similar assessed value.

A questionnaire was compiled and mailed to a cross-section of municipalities in Ontario using the different types of billing methods as noted in the Water Works Digest. Included as Exhibit E (see Appendix) is the questionnaire mailed and the accompanying letter. The questionnaire was also mailed to most of the Provincial capitals and six American cities. A total of fourteen replies were received from the thirty-six questionnaires mailed.

The following Provincial municipalities are users of the ten different identifiable billing methods used in Ontario, and were mailed a questionnaire. Those replying are shown with an asterisk beside their name.

FLAT RATE FACTORS

Type of Billing		Municipality	Population
1. Flat rate per building.	*	North Bay	50,000
		Collingwood	11,000
		Arthur	1,700
2. Flat rate per type of building.		Dryden	6,000
		Fort Elgin	6,000
		Geraldton	2,901
3. Flat rate per size of service.	*	Tillsonburg	13,000
		Parry Sound	6,078
		Cochrane	4,607
4. By number of taps.		Alexandria	3,500
5. By number of rooms.	*	Timmins	44,000
	*	Brockville	21,000
6. By number of fixtures		Cornwall	46,600
	*	Owen Sound	20,000
		Fergus	4,200
7. By number of persons.	*	Nipigon	2,303

8. By number of fixtures and persons.		Carlton Place	5,612
9. By number of rooms, fixtures and the nature of occupancy.		Kirkland Lake	15,000
		Kenora	9,862
		Engelhart	1,850
	*	TORONTO	635,685
10. By assessed value.		Hamilton/Wentworth	322,958

The following communities outside the Province of Ontario also replied.

Multiple (frontage, height and number of fixtures.)		New York	7,071,000
Fully Metered		Halifax	114,500
		Louisville	298,400
		Regina	164,300
		Victoria	233,480
		Winnipeg	564,470
Assessment		Calgary	592,700

Flat rate per residence	Charlottetown	15,300

Careful reviews of the returned questionaires revealed that some advantages and disadvantages can be identified in each method of flat rate billing used by the various utilities or commissions in Ontario. These are summarized below under the five major categories:

1. External Single Method of Factoring

This is perhaps the easiest of all the methods under this program to administer, no inspections are required as the basis for billing can be determined from outside the premises or from Public Works information about the size of the water service supplying the building. The variables in this system are:

- Flat rate per building.
- Flat rate per type of building.
- Flat rate per size of service.

Advantages

This is an uncomplicated type of billing resulting in administrative ease. A minimum of inspection staff is required as regular inspections are not required to change the basis of billing. Increased operating costs can be dealt with on a

percentage basis. In other words a simple, across the board, increase to all ratepayers.

Disadvantages

There is no equity in this system which results in one section of the community subsidizing another, that is to say, small one family dwellings may be charged the same as large multi-purpose buildings. Buildings of similar types are not necessarily of the same size or have the same water use and services of equal size do not necessarily generate the same consumption. There is no control over water wastage or leaking fixtures unless regular inspections are made.

2. Internal Single Method of Factoring

In this system any one of a number of variables are used to determine the charge for water. These would include:

- Number of taps.
- Number of rooms.
- Number of fixtures.
- Number of persons.

Advantages

Some control over the number of additions or deletions to billings is maintained by reference to building and plumbing permits after initial inspections are made. Only water using

fixtures or persons using water are factored. Some control over water wastage and leaking fixtures is maintained as inspections are made of new additions.

Disadvantages

Unequal billings may result as a single family dwelling would be charged the same as would a similar size revenue producing rooming house. There is difficulty in maintaining an accurate head count in a large urban area as population figures do not include transients, boarders, etc. An inspection staff is required as well as a regular cycle of inspections.

3. Internal Double Method of Factoring

This method calculates the water charge based on a combination of two factors. These are:

- Number of fixtures and persons.

Advantages

There is a certain amount of flexibility in charging for water consumption as only fixtures and persons using water are charged. In addition this method of factoring lends itself to the control of water waste and leaking fixtures through regular inspections should a regular inspection program be in place.

Disadvantages

Revenue producing buildings such as rooming houses and apartments, are charged the same as single family dwellings of a similar size. An inspection staff and a regular cycle of inspections are required.

4. Internal Multiple Method of Factoring

Used by the City of Toronto and others as indicated later, this method of factoring appears to be the most comprehensive of all the systems examined. The program allows for a variety of combinations to facilitate a rate structure that as closely as possible reflects the actual consumption patterns by individuals. This is achieved by calculating the number of rooms, the number and type of water using fixtures and finally the nature of the occupancy.

This system is also used in Ontario by Englehart, Kenora and Kirkland Lake. Within the limits of the number of factors used to establish water rates, it provides these communities with a similar degree of flexibility in charging. Englehart uses one schedule with ten factors, Kenora two schedules with seventeen factors and Kirkland Lake two schedules with twenty-five factors. The most serious drawback in these communities however is that they do not maintain an inspection staff. As such there is no way

of monitoring excess use, leaks or illegal connections and additions.

Advantages

Flexibility in charging is available where a variety of building sizes and types of occupancy exist. This results in a high degree of equitability among flat rate accounts as the large number of variables generates a relatively accurate indication of consumption. There exists the ability to control water waste and leaking fixtures through a regular inspection program.

Disadvantages

It is necessary to retain an inspection staff, sufficient to make regular inspections. In addition, inspections are required when plumbing or building changes are made. Also, while an extensive list of factors assists in maintaining equitability, it becomes cumbersome to administer the system.

5. Assessment Based Flat Rate

This system is substantially different from the other methods outlined in this report. Under this system, the non-metered consumer is charged for water based on the assessed value of the property.

Under this program metered properties assessed at $5,000 are averaged to establish a flat rate for non-metered properties.

For those properties assessed above or below the $5,000 average, rates are adjusted accordingly, in $500 blocks of assessment value. This figure then becomes the basis of the flat rate for non-metered properties. For example, if the assessed value of a property is $5,000 and uses an average of $130 of water per year (on meter measurement), then using this as a base the municipality applies this figure to a flat rate user with a similar assessment. For every increase or decrease of $500 valuation, the water charge is adjusted accordingly up or down.

Advantages

This is an uncomplicated system resulting in administrative ease. An inspection staff is not required as all information can be gathered from the assessment rolls.

Disadvantages

There is little equity in this system. Properties with different functions but similar valuation will be billed at the same rate. There is no control over water waste or leaking fixtures should inspections not be made.

Evaluation of Flat Rate Factoring Methods

The following table (Table VIII) shows the ranking by members of our staff committee of the preceeding systems, based on the criteria in the evaluation section of this report. Each factor is ranked on a scale of 1-5 (1 being the lowest and 5 being

the highest) as it relates to the systems outlined in this section. Each of the criteria is rated on the same scale (the rating is shown in brackets) and the factors are multiplied by the rating to give their weighting.

EVALUATION OF ALTERNATIVE FACTORING SYSTEMS

Table VIII

	External Single	Internal Single	Internal Double	Internal Multiple	Assessment
EQUITY (5)	Little relationship to consumption 1 (5)	Little relationship to consumption 1 (5)	Moderate relationship to consumption 2 (10)	Good relationship to consumption 5 (25)	Little relationship to consumption 1 (5)
FINANCIAL (4)	Little relationship between consumption and cost 1 (4)	Some relationship between consumption and cost 2 (8)	Better relationship between consumption and cost 3 (12)	Large no. of factors creates the best relationship between consumption and cost 5 (20)	Little relationship between consumption and cost 1 (4)
ADMINISTRATION & COST (3)	Easy and inexpensive to administer 5 (15)	Somewhat complicated & moderately expensive 3 (9)	Somewhat complicated & moderately expensive 3 (9)	Many variables More complicated and most expensive 2 (6)	Easy and inexpensive to administer 5 (15)
CONSERVATION (2)	No incentive 1 (2)	Some incentive through inspection 2 (4)	Some incentive through inspection 2 (4)	Some incentive through inspection 2 (4)	No incentive 1 (2)
INTELLIGIBILITY (1)	Fairly easy to understand 4 (4)	Easy to understand 5 (5)	Fairly easy to understand 4(4)	Fairly hard to understand 2 (2)	Fairly easy to understand 4 (4)
TOTALS	12 (30)	13 (31)	14 (39)	16 (57)	12 (30)

The ratings indicate to us that the Internal Multiple Method, as used by the City of Toronto, is ranked highest. While

it is clear from the rankings that there are some areas where the system is lacking, overall, and especially in the major areas of concern to the City, this method comes closest to meeting the City's needs. This system's strength is reflected in the two areas that are most important to the City. Firstly, from a financial point of view this method provides the most accurate assessment of water use and therefore a bill that ought to properly reflect consumption and second, that because of the large number of factors and schedules that there is a fair degree of equity between flat rate users.

Summary

This committee has not been able to identify a flat rate system which would guarantee equitable billing to individual consumers. Each of the systems reviewed above has advantages and disadvantages and it can be stated that any of the above identifying systems could be used by the City of Toronto. However, the City of Toronto's large number of flat rate factors, (53 at present), is said to be comprehensive and well monitored by the twenty-five inspectors employed by the City. To replace this sophisticated system by one of the systems that is easier to administer may result in a more inequitable method of flat rate billing and higher costs to some users. In regards to the former, there is no doubt that the larger the number of factors used in billing will result in more equitable billings and, in regards to the latter, the City's regular inspections ensures that unreported

changes in plumbing or nature of occupancy are detected. As well, the inspections are a means of controlling water waste due to leaking fixtures, water closets, sinks, etc. In the final analysis therefore it is suggested that the current system of flat rate billing be continued.

6. POLICY OPTIONS

6. Introduction

The following section is an examination of the options considered to be the most viable for the City of Toronto. The previous sections of this report have identified the most common methods of establishing flat rate charges, however, it is clear from the preceeding analysis that none meet the needs of the City as closely as the system currently in place. A different mix of factors or schedules would do nothing to enhance equitability, revenue or the administrative process. As such, no changes except for the updating of the factors to reflect current patterns of water use, are recommended.

The only system not considered to this point is making the supply of water a tax supported service. There is no doubt that water is the most essential commodity for everday living and perhaps should be provided free of charge from taxes.

Short of administrative simplicity, this system is believed not to have any positive attributes. This method would distribute the cost of operation to the ratepayers, with no regard to levels of consumption and therefore it fails to meet the most basic requirement of equitability in charging.

The subsequent discussion, in two parts, examines the two options considered to be the most viable for the City of Toronto. These are first, maintaining the current mix of flat rate and meter accounts or secondly, changing over to 100 per cent metering.

6. POLICY OPTIONS

6.1 Metering

The metering of all water services is the ultimate goal of any water utility. Under this system, each customer is charged for the amount of water consumption registered on a meter. This includes wasted water due to faulty plumbing, excessive lawn watering, or broken pipes in the building.

The City of Toronto, under the terms of its Water Works By-law 102-67, Section 32, Subsection 3 has the authority to install a City-owned meter on any property. In addition to this, Section 31 of the above-mentioned By-law allows a ratepayer to request the installation of a water meter for the calculation of their water bill. There is no provision however, for a metered ratepayer to move back to Flat Rate. It is under the terms of these sections that the City is endeavouring to meter the majority of the properties in the City where it is deemed to be necessary.

In 1968, the City undertook an extensive and continuing program of meter maintenance and rehabilitation. As such the incidence of faulty meters (over-registration or under-registration) is extremely low and therefore this method of charging for water consumption is fair to both the utility and the ratepayer.

Minimum Bills

An objection frequently heard to paying by the City's meter measurement program is the practice of minimum billing. Customers object to the fact that they must pay the equivalent of 9,000 gallons of water for a three month period even when they use less than that amount. However, the City must recover costs of such items as upkeep and repair to the water system, employee salaries, and mailing costs. If minimum bills were not issued to "low volume" consumers, such users would be paying less than their fair share.

To illustrate this point, a household that paid for just the use of one thousand gallons of water in a three month period, would be charged $1.47 if paid within the discount period. The cost of having the meter read is approximately $2.00, based on an inspector making an average of 55 calls per day plus mailing charges to send the bill to the customer, even at a reduced rate, would be twenty-eight cents. In addition to these charges are computer processing charges, paper and envelope costs, administration, water distribution costs and other charges. The City would actually lose money and therefore put an additional burden on other ratepayers by supplying water to that particular household.

Present Metering Policy

Since 1968 the policy of the Finance Department in conjunction with the Department of Public Works under the authority of Section 32, Subsection 1 of the Water Works By-law 102-67, has been to install water meters in all industrial and commercial buildings as well as apartments larger than fourplexes. The total net increase of new meter accounts (meters installed less meters removed due to demolitions) is approximately 500 per year.

In conjunction with the above, City Council adopted a policy in June of 1972 to acquire all privately owned meters in the City. According to the Department of Public Works Progress Report No. 2 of the City of Toronto Water Distribution System, "first priority was given to securing ownership of meters four inches in diameter and over, since these meters accounted for the largest portion of the revenue received for the sale of water through private meters". Up to 1978 (the last period for which complete figures are available) 1,262 of 2,849 private meters were purchased. At that time the program was considered successful as the remaining meters accounted for only 3% of all metered revenue.

In order to install a water meter water pipes in a building must be cut to precise measurements, fittings must be added to the pipes, the meter is then put in place and tested. Providing that all conditions are perfect, (pipes in good

condition with sufficient space between the wall and the pipe) the minimum time to install a meter would be 30 minutes. Unfortunately, Toronto is a city of older buildings and perfect conditions, as described above, are seldom found. Current estimates by the Department of Public Works project a full scale meter change over program would cost approximately $14 million in 1983 dollars. The number of change-overs required (104,000) make it clear that this program would extend over several years. Amortized over 10 years at 7% interest this would cost $19 million. Over 20 years the projection is $28 million.

Current Concerns

One of the most serious problems being encountered in the Water Revenue Branch is the physical reading of the meters three times per year.

Under the current system of quarterly billing all meter accounts are read over a six to eight week period at the end of each billing quarter. This creates a stressful situation in the Meter Unit and its associated areas. Management feels that the approximately 55 calendar days it now takes to complete this task is unsatisfactory and that a system, allowing for a ten to fifteen day reading period each month, would be more desirable. In an effort to achieve this the Water Revenue Branch management is currently examining a variety of systems that would more evenly

distribute the amount of time spent reading meters over the entire quarter.

Summary

As can be seen from the above, exclusive of the enormous costs involved, the time element alone required to change over 104,000 flat rate accounts precludes any full scale meter change over program. Apart from the apartment conversion project the fact that there is no full scale program for the installation of meters necessitates a continuous program of flat rate account inspections. This is done to identify those flat rate users where the installation of a meter would make a substantial difference in the calculation of the ratepayers bill. A discussion of flat rate factors follows in the next section.

6. POLICY OPTIONS

6.2 Flat Rate Factors

As indicated earlier the City of Toronto maintains a flat rate system containing approximately 104,000 accounts. The earliest schedule of flat rate charges available is shown in By-law No. 885 dated 1878 (Appendix Exhibit "C"). Flat rate accounts are charged based on the number of rooms, number and type of fixture, number of families, (i.e. dwelling house or rooming house) and the type of water use (i.e. under Schedules A, B and C). In addition there are five categories or types of users, these are dwelling house, rooming house, commercial establishment, institution, and church.

Although there is no recognized uniform practice for the development of a water rate schedule, the rates are intended to distribute the user charges in a reasonably equitable manner among those served by the water system.

One disadvantage to the City's flat rate system is the need to maintain a fairly large staff of inspectors, to update the flat rate accounts every three years. In a city such as ours, the population in some areas is constantly changing. Many buildings in older sections of the City are being renovated resulting in the installation of new and additional fixtures. As these accounts

are in our flat rate system, inspections to update the billing factors are necessary.

Present Flat Rate Policy

The City of Toronto continues to establish flat rate accounts in those cases where it is considered uneconomical to place meters. This situation pertains primarily to smaller residential buildings and is at the discretion of the Chief Water Inspector. When a "New Service Report" is received by the Water Revenue Branch, a Senior Inspector will examine the premises and report to the Chief Inspector who in turn will decide, if the building is smaller than a fourplex, whether or not a meter should be installed.

Each account is supplied by a single service unless the City Engineer allows a second service to be installed. Shared services are avoided if at all possible.

A second service would occur under two conditions. The first is where the size of the building and the level of consumption is such that a large volume is required, although this is seldom the case with flat rate accounts. The second instance is where an interruption in water service, such as a main break, would affect the operation of a business. In this case a second service may be installed as a backup system to be used only in an emergency.

The City of Toronto does not allow the mixing of meter accounts and flat rate accounts where more than one service does exist. When a flat rate account becomes accessed to a metered account, both accounts must be metered. The reverse is never allowed.

The City of Toronto allows one free fixture when computing a flat rate bill. Despite a search of the City of Toronto Archives, the Public and Reference Libraries, and many other sources of information no reason for this situation can be found, save a 1914 report to the Board of Control by John Patterson, then the City Treasurer, in which a passing reference is made to this practice, "Under the Toronto tariff, one kitchen tap is allowed free". As the City does not charge for taps the Water Revenue Branch does not charge for one fixture.

As a result of this it may be argued that by eliminating this free fixture, the City would gain a considerable amount of revenue. This however, would not be the case. The City supplies water at cost, therefore it would simply mean the rate charged for all fixtures would have to be lowered. In addition to having to re-adjust the rates charged, should the free fixture be discontinued, the City would lose the political advantage associated with providing this free fixture. The Public Health Act, R.S.O. 1970, Chapter 377, requires that a municipality provide a "proper supply of water" and Schedule B, paragraph 12 requires that "the owner of every house within the municipality

shall provide for the occupant of the house a sufficient supply of water". Further to this the Municipality of Metropolitan Toronto Act, R.S.O. 1970, Chapter 295, Section 33 requires that the authorities "secure to the inhabitants of the Metropolitan Area a continued and abundant supply of pure and wholesome water." These statutory requirements to supply water would be useless if a property had no fixture through which the water can flow. Therefore, by providing one free fixture to each ratepayer the City is not only meeting it's commitment to supply water but is also providing the customer with free access to this essential commodity.

Proposed By-Law Amendments

The category of "all other factors" as shown in Table II is broken down in the following table (Table IX). The percentage of revenues shown is each category's contribution to the 42.44 percent of the total which represents this item's contribution to the total flat rate revenue of $12,472,173.

It is clear from the chart that Schedule "A" factors contribute the lion's share of revenues or approximately 96.8 percent, Schedule "B" yielding approximately 3 percent and Schedule "C" generating less that 2/3 of a percent.

The question that begs to be answered is "with Schedule "C" generating so little income, why is it maintained?" Simply stated the answer is that the City must maintain some basis upon

which to charge the customer. In most of these cases it would cost the ratepayer a great deal of money to affect the plumbing changes necessary to install a meter and as such the City has chosen to accommodate these customers by not forcing the issue. However, it is expected that over the next few years, Schedule "C" will be able to be eliminated completely.

1983 ESTIMATED REVENUE GENERATED BY CATEGORY
"ALL OTHER FACTORS" Table IX

FACTORS	RATE $	REVENUE GENERATED $	%AGE OF TOTAL REVENUE %
Schedule A			
Basins	9.46		
Baths	9.46		
Showers	9.46		
Sinks	9.46		
Laundry tubs (pair)	9.46		
Laundry machine	9.46		
		5,126,418	96.22
Single/additional laundry tubs	5.62	8,576	0.16
Self-acting urinals	11.26	386	0.01
		5,135,380	96.39
Schedule B			
Basin	18.80		
Bath	18.80		
Shower	18.80		
Sink	18.80		
Laundry tubs (pair)	18.80		
Laundry machine	18.80		
		153,600	2.89
Single/additional laundry tub	9.46	677	0.01
Self-acting urinal	22.48	5,093	0.10
		159,370	3.00
Schedule C			
Bakeries	11.42	114	0.00
Baptistries	6.38	242	0.00
Barber & Beauty Parlour Chairs	9.46	1,230	0.02
Church Buildings	1/3 of Sched. B rate	10,026	0.19
Dental Fountain	46.70	280	0.01
Dishwasher	37.48	37	0.00
Drinking Fountain	18.80	865	0.02
Fountains	30.80	300	0.01
Building Material	Variable	17,000	0.32
Photo Tank	18.88	227	0.00
Restaurant Meals	1.92	691	0.01
Steam Engine per h.p	13.16	79	0.00
Washrack	93.52	2,151	0.04
		33,242	0.61
		5,327,992	100.00

As time has passed, the uses of water have gradually changed. For example, the keeping of livestock, is no longer permitted within the City limits. Hand laundries and most water powered equipment have virtually disappeared. On the other hand new types of water using fixtures are being found, and some charge for the water so used must be formulated. Two examples of this, bidets and saunas, are being installed in greater numbers than ever before. The constant change in factor types calls for a regular re-assessment of our basis for flat rate billing.

In order to ensure that the information used to generate the conclusions contained in this report are accurate and current, the Inspection Branch visited each of the 202 properties that contain Schedule "C" factors. The numbers and revenue estimates quoted in Table X are a result of these inspections.

The following table shows the twenty-five changes recommended by this study group to Schedules A, B and C of the flat rate factors. All factors in Schedule C were examined and therefore even those items where no changes have been recommended are included for the reader's information. There are four changes in Schedule A, four in Schedule B and seventeen in Schedule C. The amendments fall into two categories:

1. Language or rate changes to Schedule C.

2. Additions or deletions to Schedules A, B and C.

ALTERATIONS IN FLAT RATE FACTORS

Table X

ITEM	RATE $	RECOMMENDED CHANGE	REASON
Schedule A			
Bidet	9.46	Add	Not previously listed
Saunas connected to water or drains	9.46	Add	Not previously listed
Urinals, not self-acting	46.70	Delete	Always metered when reported
W.C.'s, not self-acting	48.62	Delete	Obsolete
Schedule B			
Bidet	18.80	Add	Not previously listed
Saunas connected to water or drains	18.80	Add	Not previously listed
Urinals, not self-acting	93.50	Delete	Always metered when reported
W.C.'s, not self-acting	97.20	Delete	Obsolete

ALTERATIONS IN FLAT RATE FACTORS

Table X (Cont'd)

ITEM	RATE $	RECOMMENDED CHANGE	REASON
Bakeries and delicatessens average number of barrels of flour, or parts thereof, used per day for commercial purposes, each barrel	11.42	Delete	a) Always metered when reported. b) There are currently five locations, four of which are being metered. c) Revenue from one location, which uses one barrel of flour but is charged for other fixtures at a commercial rate will be reduced by $11.24
Baptistry - must have tap and drain	6.38	No change	a) There are 38 Flat Rate locations in the City. Meters have been ordered on eight. b) Revenue generated is $242.00
Barber and Beauty Parlour Chairs	9.46	Language and rate change	a) Change from fee per chair to flat rate for barber shop or beauty parlour at twice current rate per chair, i.e., $18.92 b) There are 30 locations in the City that cannot be metered with an average of 2 chairs per location (there are 7 locations with only 1 chair) therefore generating approx. $280.00 c) There would be no loss of revenue. d) It is expected that 25 locations will be metered.

ALTERATIONS IN FLAT RATE FACTORS

Table X

ITEM	RATE $	RECOMMENDED CHANGE	REASON
Church Buildings - for each fixture in any such bldg. so used coming within Schedule "B", one-third of the rates in Schedule "B"		No change	a) There are approx. 63 locations in the City. Meters have been ordered on 8 locations. b) Revenue generated is approx. $10,000.00
Dental Fountains	46.70	No change	a) There are 4 locations with 6 fountains in the City. A meter has been ordered on 2 locations. b) Revenue generated is $280.00
Dishwasher	37.48	Language change	a) "Dishwashers" to "commercial dishwashers". Domestic dishwashers are not charged and the change is required to exclude them. b) There is only one location in the City which cannot be metered. c) There would be no change in revenue.
Drinking Fountains	18.80	No change	a) There are 36 locations with a total of 47 drinking fountains. Meters have been ordered on 8 locations. b) Revenue generated is $883.00

ALTERATIONS IN FLAT RATE FACTORS

Table X (Cont'd)

ITEM	RATE $	RECOMMENDED CHANGE	REASON
Fish Tank	46.70	Delete	a) Always metered when reported. b) There are no existing unmetered locations. c) There would be no loss revenue.
Fountains, for 1/16" orifice or less, per season All others, per season	30.80 119.72	No change	a) These are billed manually on a seasonal basis. b) Revenue generated is approx. $23,000.00 c) There are approx. 200 on record.
Greenhouse - According to area of premises, for 500 sq. ft. or under Over 500 sq. ft. and under 1,000 sq. ft. For every 1,000 sq. ft. additional or part thereof	3.80 5.62 1.92	Delete	a) Always metered when reported. b) There are no existing unmetered accounts. c) There would be no loss of revenue.
Horses - For hire, or commercial purposes, kept on premises, each Other horses, each	15.10 9.46	Delete	a) Obsolete. b) There are no unmetered locations in the City. c) There would be no loss of revenue.

ALTERATIONS IN FLAT RATE FACTORS

Table X (Cont'd)

ITEM	RATE $	RECOMMENDED CHANGE	REASON
Humidifiers - When connected to water and drain, each	15.10	Delete	a) Obsolete. b) This type of equipment connected to water and drain no longer exists. c) There would be no loss of revenue.
Laundry Business - For each tub	9.52	Delete	a) Always metered when reported. b) There is one location in the City rated for 5 hands (employees). The water is off. Should the business re-open, a meter would be installed. c) There would be no loss of revenue.
Additional Charges: Where three hands or less employed	37.68		
Where four or five hands employed	60.12		
Where six or seven hands employed	82.70		
Where eight hands or more employed	97.76		
Materials used in building or repairs to buildings or other construction work Bricks, per 1,000	0.30	No change	a) This charge is applied by the Buildings Dept. and collected through b) Revenue generated in 1982 was approximately $17,000.00
Plastering, per 1,000 sq. yds.	11.30		
Concrete, per cubic yard	0.78		
Minimum rate for each building or for repairs or alterations, where any of the above materials is used, each	3.80		
Photographic Washing Tanks	18.88	No change	a) There are 12 of these fixtures in the City. Meters have been ordered on 3 of these locations. b) Revenue generated is approximately $226.00

ALTERATIONS IN FLAT RATE FACTORS

Table X (Cont'd)

ITEM	RATE $	RECOMMENDED CHANGE	REASON
Potato Peeler	37.68	Delete	a) Always metered when reported. b) There are no existing unmetered locations. c) There would be no loss of revenue.
Private houses unoccupied or occupied by caretaker with his family. Private houses of not less than twelve rooms, upon certificate of the owner that he has placed a caretaker in charge, as follows: $4.02 per room per annum, plus additional rates for single bath, closet, and basin, as set out in Schedule A (245-74, 788-77, 56-79)		Delete	a) Obsolete. b) There are none on record. c) There would be no loss of revenue.
Restaurants - Estimated average number of meals served per day, each	1.92	Delete	a) There are 11 locations in the City 5 of which shall be metered which represent 58% of the income generated on a per meal basis. b) The deletion of the other locations which would continue to be charged for water use based on the number of fixtures and rooms at a commercial rate will result in a reduction in revenue of approx. $375.00

ALTERATIONS IN FLAT RATE FACTORS

Table X (Cont'd)

ITEM	RATE $	RECOMMENDED CHANGE	REASON
Steam Engines - per horsepower	13.16	Delete	a) Only two locations exist in the City one of which no longer operates. b) The existing location would continue to be charged for water consumption at a commercial rate on other fixtures. There would be a reduction in revenue of $13.16
All other engines using water, per horsepower	11.30	Delete	a) Obsolete. b) There are no locations with this factor. c) There would be no loss of revenue.
Syphons - not self-acting, each	94.00	Delete	a) Obsolete. b) There are no locations with this factor on record. c) There would be no loss of revenue.
Trenches - Water for sinking trenches 6 ft. deep and under, for each 100 ft. length or part thereof Over 6 ft. deep, for each 100 ft. length or part thereof	3.80 7.48	Delete	a) Obsolete. This situation is now covered through Hydrant permits which are issued by the Dept. of Public Works and charged by the Water Revenue Br. pursuant to Sections 10 and 40 of By-law 102-67. b) There would be no loss of revenue.
Vegetable Fountain or Sprays	11.30	Delete	a) Always metered when reported. b) There are no flat rate accounts with this factor. c) There would be no loss of revenue.

ALTERATIONS IN FLAT RATE FACTORS

Table X (Cont'd)

ITEM	RATE $	RECOMMENDED CHANGE	REASON
Washing Machines (water powered) each	46.78	Delete	a) Obsolete. b) There are no locations with this factor. c) There would be no loss of revenue.
Washracks, each	93.52	No change	a) There are 20 locations with 23 washracks. It is expected that 3 locations will be metered. b) Revenue generated is $2,150.00

*Note: The City has the right by virtue of By-law 102-67, Section 32, Subsection 3, to order the installation of a City-owned meter on any premises.

Should the above recommendations be accepted this would result in the addition of four factors and the deletion of nineteen factors making a net decrease of fifteen factors. This twenty-seven percent reduction would leave a total of thirty-nine factors under the three schedules.

Summary

Whenever 100% metering has been considered, the cost of installing meters, plus the cost of maintaining and reading these meters, has always outweighed the intrinsic advantages of complete metering. It is necessary therefore, to maintain some other method of charging non-metered users of water.

The flat rate system used by the City of Toronto has some draw backs, the most significant of which are the need to maintain a large inspection staff to keep records current and to ensure that leaks do not go undetected. Despite a number of reviews over the past hundred years no better or more equitable system has been devised.

6. POLICY OPTIONS

6.3 Evaluation of the Options

The data contained in this report indicates that there exists two viable options for the City. The first is continuing with the current flat rate/meter combination, using the Internal Multiple Method of Factoring for determining charges to flat rate users. The second option would be to change over to 100% metering.

This section seeks to evaluate these two options in light of the evaluation criteria set out in Section IV of this report.

To facilitate this evaluation each of the five criteria are rated on a scale of 1-5 (1 being the lowest and 5 being the highest) based on the relative merits of each variable on the two options. Each of the criteria is rated on the same scale (the rating is shown in brackets) and the factors are multiplied by the rating to give the proper weighting.

The reader will recall that the five criteria are:

1) Equity

2) Financial Considerations

3) Administrative and Cost Concerns

4) Conservation

5) Intelligibility to Consumers

RANKING OF TWO OPTIONS

Table XI

	100% Metered	Flat Rate/Meter
EQUITY (5)	All customers billed on actual consumption 5 (25)	Both classes are carrying their own weight. Some discrepancy in flat rates where no. of fixtures is same but no. of residents is different 4 (20)
FINANCIAL (4)	Bills for all water including waste and leaks 5 (20)	Some loss of revenue through leaks and waste in flat rate accounts 4 (16)
ADMINISTRATION AND COSTS (3)	Least Complicated 5 (15)	Somewhat complicated 2 (6)
CONSERVATION (2)	Incentive to those who use more than minimum Gallons. Little incentive to minimum bill customers 3 (6)	No incentive for flat rate users to conserve 2 (4)
INTELLIGIBILITY (1)	Easy to understand billed on actual readings 5 (5)	Difficult for some to understand how a flat rate bill is calculated 2 (2)
TOTAL	23 (71)	14 (48)

It is clear from the above ranking that a system that is 100% metered is the best alternative. It provides the utility with complete accountability for water consumption and billing. It is administratively easy to operate, provides the consumer with an incentive to conserve and is easier for the ratepayer to understand. However, the problem for the City of Toronto is the

enormous costs involved in undertaking this transition. Given the relative success of the current program it is difficult to justify a full scale change over program.

7. CONCLUSION

The preceeding report has reviewed in some detail, the development of the current water rate structure in the City of Toronto. The various methods and systems in place not only in Toronto but also in a variety of other communities were examined with a view to identifying the best system. The historical perspective has provided the reader with a sense for the process through which the organization has evolved and an evaluation of the relative benefits of meter versus flat rate billing were examined. The conclusions are summarized here.

An examination of the current flat rate factors indicated, for the most part, that the fifty three factors now in place cover the majority of water consuming appliances in common use today. A total of twenty-five factors have been identified as requiring changes. These are illustrated in Section 6.2, Chart X. It is suggested therefore that pursuant to Chart X, these alterations be made and that they be included or deleted from the appropriate schedule of By-law 102-67, as amended, and that leave be granted for the introduction in Council of a bill to give effect thereto.

As compared to the other flat rate systems the method used in the City of Toronto is significantly better in the areas of financial benefits and equity among ratepayers. As a public utility these are the two most important areas. No flat rate system will enhance conservation as actual volume of consumption are not recorded. Finally, from an administrative point of view

our system is somewhat complicated because of its large number of variables. It is this situation however, that directly contributes to the positive aspects of this program.

The evaluation of the equity between metered and non-metered accounts shows that a balance between these two classes of users exists. It is clear that each carry their fair share of the costs incurred based either on their actual or estimated consumption. As such, no alteration in the respective rate structures are recommended.

The third major area of study was the perennial question of 100% metering. The obvious advantages of full metering were stated in the body of the report. The benefit of complete accountability for "main loss", the ease of administration and the accuracy of billing based on meter measurement are all attractive. However, the cost of installing meters on all flat rate accounts, estimated today to be in excess of $14 million, appears to far outweigh any of the above mentioned benefits.

Finally the survey of other flat rate billing systems clearly indicated that the system currently in place in the City of Toronto provides the most equitable and precise method of establishing the appropriate user charges. The large number of factors coupled with the three different schedules is the most comprehensive of all the systems studied. The fact that the City is committed to providing its ratepayers with water service at the lowest possible cost while not resorting to debenturing or drawing from tax revenue has resulted in the maintenance of our highly

detailed program. It is clear that this system has in the past, and will, in the future, continue to serve the City well.

It is the opinion of this Staff Committee that the current combined system of flat rate and metered accounts be maintained.

Exhibit A

Water Works By-law 102-67

OFFICE CONSOLIDATION

This consolidation is prepared for purposes of convenience only; for accurate reference see by-laws as adopted by City Council.

NO. 102-67 A BY-LAW

As amended by By-laws Nos. 234-67, 242-67, 334-67, 403-67, 176-72, 245-74, 248-75, 44-77, 788-77, 717-78, 56-79, 32-80, 810-80, 145-81, 690-81, 722-82.

Respecting the Water Works and Rates

(Passed February 15, 1967)

The Council of the Corporation of the City of Toronto enacts as follows:

1. In this by-law unless a contrary intention appears, words importing the masculine gender include females, and words in the singular include the plural and words in the plural include the singular.

2. In this by-law, unless the context otherwise requires,

(a) "Corporation" shall mean The Corporation of the City of Toronto;

(b) "dwelling house" shall mean any place of residence occupied by one person only or by a family which shall mean the head of the household, his wife, their unmarried children, the parents of the head of the household and of his wife, any servants employed in the household, and not more than one other person, or any of them; or any place of residence occupied by a person with his parents, unmarried brothers and sisters, servants employed in the household, and not more than one other person, or any of them; provided that in either case such parents are not maintaining separate living quarters and taking their meals apart from the family.

(c) "flat" shall mean each floor or part therof of a place of business, or a place of business separately occupied on one floor of a building;

(d) "person" shall include any partnership, body corporate or politic, agent, or trustee, and the successors, heirs, executors, administrators, or other legal representatives of a person to whom the context can apply according to law;

(e) "premises" shall mean any house, tenament, building, lot, or part of a lot, or both, in, through, or past which the water pipes run;

(f) "rate" shall mean the price, rate, or rent, as fixed from time to time by the Corporation, which any owner or occupant of premises shall pay as water rate or rent;

(g) "room" shall mean each room on the premises except bathrooms, and shall include any recreation room, summer kitchen, kitchenette, breakfast room, conservatory, sun room, enclosed verandah and enclosed back porch having an area of 50 square feet or more; (176-72)

(h) "rooming house" shall mean any place of residence other than a dwelling house, except private hospitals, rest homes, schools, fraternity houses, clubs, hotels, and similar places;

(i) "service" shall mean water service; and

(j) "Water Works" shall mean the various works, properties, equipment, pipes, and appurtenances for the supply of water by the Corporation;

(k) a commercial or industrial building or structure shall mean a building or structure other than a 'dwelling house' or a 'rooming house'. (176-72)

3. All matters in connection with the Water Works shall be dealt with either by a financial section or by a works section.

4. The financial section shall, subject to the control of the Executive Committee, be under the direction of the City Treasurer whose duties shall be as follows: (176-72)

(a) to have charge and control of all employees of the Corporation in the financial section;

(b) the inspection and rating of any premises supplied with water;

(c) the preparation and supervision of all accounts and records; and

(d) collecting or receiving all rates and any other charges whatever in connection with the Water Works.

5. The works section shall, subject to the control of the Committee on Public Works and Council, be under the direction of the City Engineer whose duties shall be as follows:

(a) to have charge and control of all employees of the Corporation in the works section; and

(b) The construction, conduct, operation and maintenance of the Water Works.

6. The owner or occupant of any premises to which water is to be supplied or the supply continued shall apply therefor in person or by agent to the Corporation's Water Works Revenue Office and shall there give information verbal or written of the size and description of such premises, the uses to which the water is or is intended to be put, the number and description of fixtures, appliances, and services, and any other information that may be necessary in order to form a correct estimate of the rate to be charged in respect of such premises. If it is subsequently ascertained that this information was incorrect, or incomplete and that any additional charge should have been made, such additional charge shall be payable by the owner or occupant forthwith, without discount. (176-72)

7. Except in cases falling within section 8 of this by-law, a person applying for water to be supplied or the supply continued to any premises shall pay arrears of rates, if any, due in respect of such premises and, in advance, a proportionate part of the rate for the current half-year; provided that, if the application is made within one month of the expiration of the current half-year, the person applying shall pay, in addition to the above rates, the rates for the following half-year in advance subject to discount.

8. If a meter is already installed or is to be installed on premises, the person applying for continuation of the water supply shall pay any arrears of rates. Where a meter is already installed, he shall pay in addition the amount payable for water supplied during the current quarter up to the date of his application, subject to discount. Where a meter is to be installed, a refund shall be made to him of the proportionate part of any prepaid rates for the period subsequent to the installation of the meter, upon presenting the current receipt for rates at the Water Works Revenue Office.

9. The City Treasurer may shut of the water from premises as follows:

(1) At any time after the end of the calendar month in which any rate becomes payable for which the rate is thus in arrears.

(2) When leaks are not promptly repaired, until repairs are made.

(3) Where any apparatus or appliance using water is creating an unsafe condition or nuisance.

(4) For fraud or abuse.

Where the water has been turned off for non-payment of rates, it shall not again be turned on until there shall have been paid to the Corporation:

(a) the rates due in respect of the premises;

(b) the sum of three dollars to cover the cost of turning off and turning on the water; and

(c) any additional cost involved in disconnecting the water supply to prevent misuse after it has been so turned off or in reconnecting such supply. (176-72)

10. Water shall not be used for any special purpose except with the consent of the City Treasurer, to be first obtained through the Water Work Revenue Office. A special rate, as set out in section 40 of this by-law, shall be payable in addition to the ordinary rates for the premises.

11. Subject to section 45 of this by-law, rates shall be charged for any premises until notice to discontinue the service at these premises has been received by the Water Works Revenue Office.

12. Except where water is supplied through a metered service, every person applying to the Commissioner of Buildings for a permit to erect, alter, or repair any building or structure, shall furnish to the Commissioner of Buildings an estimate of the quantity and nature of all masonry, plastering, and other materials involving the use of water and shall pay the rates set out in schedule C to this by-law for water supplied therefor. The Commissioner of Buildings shall not issue a permit for such erection, alteration, or repair until such payment has been made.

13. Each owner or occupant of premises supplied with water shall, whenever so required by the City Treasurer, furnish him with a written statement, signed by such owner or occupant, giving particulars of the persons occupying the premises and of the rooms, fixtures, appliances, and services on such premises in order to enable a proper rate to be fixed; provided that whenever the use of premises is changed, or fixtures, appliances, or services are installed or removed, so as to affect the consumption of water, full particulars shall forthwith be furnished by the owner or occupant to the Water Works Revenue Office. If the City Treasurer, after inspection if necessary, is satisfied that

such change would cause a higher rate to be payable, such rate shall be payable forthwith, but if a lower rate, then a refund shall be made, calculated from the date notification is received at the Water Works Revenue Office. Provided, further, that whenever the owner or occupant voluntarily reports to the City Treasurer circumstances which make a higher rate payable, discount shall be allowed, otherwise no discount shall be allowed.

14. Fixtures, appliances, and services shall be disconnected from the water supply and drain connections to the satisfaction of the City Treasurer or his authorized inspector before the rate in respect thereof will be remitted or refunded. No person shall re-connect the same without first giving notice to the Water Works Revenue Office.

15. In case of leaking or defective pipes, fixtures, meters, or indicators on any premises, the City Treasurer or City Engineer may, if the necessary repairs or alterations are not made within forty-eight hours after notification to the owner or occupant, turn off the supply of water; provided that if the condition of such pipes, fixtures, meters, or indicators is such that damage may be occasioned to property, the supply of water may be turned off without notice. In all such cases the charges mentioned in section 9 of this by-law shall be payable. (176-72)

16. Whenever a frozen water supply, leak, or other fault occurs in a service pipe at or near the street line, the owner or occupant of the premises served shall deposit with the City Engineer such sum of money as the City Engineer may deem sufficient to pay the cost of ascertaining the location of and restoring or repairing it. Where the frozen water supply, leak or other fault is ascertained to be on private premises, the owner or occupant thereof shall pay such cost in full but the amount of the deposit shall be set off against the full cost; where however, it is ascertained to be on the Corporation's land, the Corporation shall bear the cost and refund the deposit. If the owner or occupant of the premises refuses or neglects to make the deposit when so required, the City Engineer may shut off the supply of water to the premises without notice.

17. Whenever the owner or occupant of any premises desires to be supplied with water or to alter existing services within the street line, he shall apply to the City Engineer on the form provided and at the same time pay to the City Treasurer the charge for providjng the water service pipe from the main to the street line or the cost of the alterations. Installation or alteration of the service from the street line to the building or premises is the responsibility of the owner or occupant. (176-72)

18. Any water supplied or made available for any land or building for the purposes of protection of property of persons from fire or for preventing fires or the spreading of fires shall not be used for any other purpose. Any person contravening the provisions of this section is guilty of an offence and shall pay upon conviction a fine of $500.00. (176-72)

19. Any person desiring a larger service than that already existing may, subject to the approval of the City Engineer, be provided therewith and shall forthwith pay to the City Treasurer the charge therefor, but such larger service shall, if the City Engineer so directs, be provided only on condition that the existing services be disconnected from the supply main.

20. No premises shall be supplied with more than one service, except with the approval of the City Engineer.

21. Unless the City Engineer otherwise directs, a separate service shall be installed for each premises abutting on a highway and requiring service.

22. The City Engineer may determine what services are required, location of such services, and size of pipes and meters to be used in supplying any premises. (176-72)

23. The owner or occupant of premises provided with two or more services connected to separate sections of the distribution system and inter-connected inside the premises shall, in additon to manually operated valves or stop-cocks, instal automatic check valves, approved by the City Engineer, on each service and maintain them in good operating condition to the satisfaction of the City Engineer. Where such check-valves or valves are installed on metered services, a safety valve shall be installed on all hot water heating systems and set to a pressure designated and approved by the City Engineer. If the owner or occupant neglects or refuses to instal or maintain such check-valves and safety valves as aforesaid, the City Engineer may turn off the supply of water to those premises without notice.

24. All supply valves for closets or urinals shall be self-closing.

25. Where two or more services supply one building or structure, or where two or more services are interconnected between adjacent buildings or structures, each service shall be metered if the City Engineer so requires. (176-72)

26. Any request to have a service pipe laid in a designated location shall be made in writing to the City Engineer, together with a plan if required by him.

27. No work of any kind connected with the installation, maintenance, or repair of services over, on, in, or under any part of a public highway shall be performed except by authorized employees of the Corporation provided that service pipes from the main pipe line to the line of the highway may be laid down by a contractor pursuant to a contract between such contractor and the Corporation. (403-67)

28. The officers and servants of the Corporation shall have free access to private premises, at proper hours of the day and upon reasonable notice given and request made, for the purpose of turning water services on or off and to install, inspect, test and repair meters, fixtures and equipment as required and for the purpose of the inspection mentioned in Section 13. (176-72)

29. Each service pipe shall be provided with a cut-off or "stop and waste" valve, of pattern approved by the Medical Officer of Health, which shall be placed just inside the outer wall where the service pipe enters the building or structure supplied.

30. Whenever the service is discontinued or the premises vacated, the owner or occupant shall turn off the cut-off or "stop and waste" valve on his premises and drain water system in its entirety. (176-72)

31. (1) Any person desiring to pay rates according to meter measurements may apply to the Water Revenue Officer to have a meter installed and where such permission is granted the meter shall be provided and installed by the Corporation.

(2) Where there is installed in any premises a meter used for measuring the water supply for billing purposes, it shall be inspected and tested by the City Engineer at regular intervals as determined by the City Engineer.

(3) When additional tests are requested by an owner or occupant, a charge shall be made as follows:

Size of Meter	Per Test
5/8 inch to 2 inches	$50.00
3 inches and more	$100.00

(4) All charges for such tests shall be payable at The Water Revenue Office. (176-72)

32. (1) Meters shall be installed in all commercial and industrial buildings.

(2) The City Engineer may determine the number of

meters that may be installed in any premises.

(3) The City Treasurer may order that a meter owned by the Corporation be installed in any premises. (176-72)

33. (1) Subject to subsections (2), (3), (4),(5) and (6) of this section, the owner or occupant of premises in which is installed a meter owned by the Corporation shall pay quarter-yearly for the use of the meter, depending upon the size thereof, the amount set forth in the following schedule, namely: (717-78) (810-80) (722-82)

Size of Meter	Quarterly Charge
5/8"	$ 1.85
3/4"	2.03
1"	2.69
1 1/2"	2.95
2"	3.38
3" single	7.82
3" compound	7.82
4" single	9.51
4" compound	9.51
6" single	12.67
6" compound	12.67
6" protectors	18.51
6" full flow	12.93
8" single	17.05
8" compound	19.62
8" protectors	19.62
10" compound	19.62
12" compound	19.62

(176-72), 690-81

(2) Notwithstanding subsections (1), (3), (4), (5) and (6) of this section, effective immediately after the last meter reading in December, 1978, the owner or occupant of premises in which is installed a meter owned by the Corporation shall pay quarter-yearly for the use of the meter, depending upon the size thereof, the amount set forth in the following schedule, namely: (717-78) (810-80) (690-81) (722-82)

Size of Meter	Quarterly Charge
5/8-inch	$ 2.62
3/4-inch	2.84
1-inch	3.79
1-1/2-inches	4.11
2-inches	4.63
3-inches Single	11.83
3-inches Compound	11.83
4-inches Single	13.32
4-inches Compound	13.32

6-inches Single	19.16
6-inches Compound	19.16
6-inches Protectors	27.00
6-inches Full Flow	19.70
8-inches Single	26.42
8-inches Compound	29.56
8-inches Protectors	29.56
10-inches Compound	31.44
12-inches Compound	31.44

and not the amounts as set forth in the schedules contained in the said subsections (1) and (3). (717-78)

(3) Notwithstanding subsections (1), (2), (4), (5) and (6) of this section, effective immediately after the last meter reading in December, 1979, the owner or occupant of premises in which is installed a meter owned by the Corporation shall pay quarter-yearly for the use of the meter, depending upon the size thereof, the amount set forth in the following schedule, namely: (717-78) (810-80) (690-81)

Size of Meter	Quarterly Charge
5/8-inch	$ 3.13
3/4-inch	3.38
1-inch	4.82
1-1/2-inches	4.89
2-inches	5.47
3-inches Single	14.50
3-inches Compound	14.50
4-inches Single	15.86
4-inches Compound	15.86
6-inches Single	23.48
6-inches Compound	23.48
6-inches Protectors	32.66
6-inches Full Flow	24.22
8-inches Single	32.66
8-inches Compound	36.18
8-inches Protectors	36.18
10-inches Compound	39.32
12-inches compound	39.32

and not the amounts as set forth in the schedules contained in the said subsections (1) and (2) (717-78)

(4) Notwithstanding subsections (1), (2), (3), (5) and (6) of this section, effective immediately after the meter reading in December, 1980, or January 1, 1981, the owner or occupant of premises in which is installed a meter owned by the Corporation shall pay quarter-yearly for the use of the meter, depending upon the size thereof, the amount set

forth in the following schedule, namely: (810-80) (690-81)(722-82)

Size of Meter	Quarterly Charge
5/8"	$ 3.26
3/4"	3.61
1"	4.94
1 1/2"	5.38
2"	6.60
3" Single	15.22
3" Compound	15.22
4" Single	17.06
4" Compound	17.06
6" Single	25.18
6" Compound	25.18
6" Protectors	35.69
6" Full Flow	26.06
8" Single	34.05
8" Compound	39.93
8" Protectors	39.93
10" Compound	43.26
12" Compound	43.26

(5) Notwithstanding subsection (1), (2), (3) and (4) of this section, effective immediately after the meter reading in December, 1981, or January 1, 1982, the owner or occupant of premises in which is installed a meter owned by the Corporation shall pay quarter-yearly for the use of the meter, depending upon the size thereof, the amount set forth in the following schedule, namely: (690-81)

Size of Meter	Quarterly Charge
5/8"	$ 3.45
3/4"	3.75
1"	5.25
1 1/2"	5.68
2"	6.90
3" single	15.90
3" compound	15.90
4" single	17.92
4" compound	17.92
6" single	26.09
6" compound	26.09
6" protectors	37.04
6" full flow	27.06
8" single	35.24
8" compound	41.70
8" protectors	41.70
10" compound	45.90
12" compound	45.90

(6) Notwithstanding subsections (1), (2), (3), (4) and (5)

of the section, effective immediately after the meter reading in December, 1982, or January 1, 1983, the owner or occupant of premises in which is installed a meter owned by the Corporation shall pay quarter-yearly for the use of the meter, depending upon the size thereof, the amount set forth in the following schedule, namely: (722-82)

Size of Meter	Quarterly Charge
5/8"	$4.08
3/4"	4.41
1"	6.03
1 1/2"	6.90
2"	7.78
3" single	17.40
3" compound	17.40
4" single	19.62
4" compound	19.62
6" single	27.68
6" compound	27.68
6" protectors	39.21
6" full flow	28.77
8" single	37.20
8" compound	44.43
8"protectors	44.43
10" compound	47.72
12" compound	47.72

(7) The amount payable under subsections (1), (3), (4),(5) and (6) shall become due on the same date, shall be payable and collectible in the same manner and shall be subject to the same discount as the rates for the water supplied through the meter. (717-78) (810-80) (810-80)(722-82)

34. The owner or occupant of any premises in which a meter is to be installed shall provide space for such meter in a location approved by the City Engineer, which shall be close to the point where the service enters the building and accessible at all time for reading, repairing, testing, or replacing. If such location cannot be provided to the satisfaction of the City Engineer within existing buildings, the owner or occupant shall pay the cost of providing a meter chamber.

35. (1) All services one and one-half inches or over in size and all services less than one and one-half inches in size to premises where the water supply by reason of its user cannot be disrupted whenever required by the Corporation for repairing, testing or replacing water meters shall have by-passes for water meters installed at the expenses of the owner or occupant.

(2) The meter bypass shall be closed and a seal affixed to the shut-off valve by the City Treasurer. The bypass shall not be opened except by written permission from the City Treasurer and the amount of water used shall be estimated in accordance with Section 37. (176-72)

36. Whenever a meter is to be installed on any premises where the water piping is, in the opinion of the City Engineer, in poor condition, the owner or occupant shall replace the piping with sufficient new piping to permit installation of the meter; and if, whenever a meter is being installed or removed, the piping is damaged owing to its defective condition, the owner or occupant shall install new piping at his own expense. (176-72)

37. Whenever a meter is found to be defective or is not registering the correct amount of water used, the City Treasurer shall estimate the amount of water used until the meter is repaired or replaced, and his decision shall be final. (176-72)

38. No person shall operate, or permit to be operated on his premises, any garden fountain or similar device except a recirculating system for more than six hours in any day. (176-72)

39. Subject to sections 40, 41, 43, 44 and 46, the owner or occupant of any premises shall pay the rates applicable to his premises set out in schedules A, B, and C to this by-law for water supplied or ready to be supplied to such premises, whether such owner or occupant uses the water or not. (176-72)

40. Where water is supplied on meter measurement to premises situated wholly within the City of Toronto, the owner or occupant of the premises shall pay at the rate of $1.630 cents for each 1,000 gallons based on the total water consumption or estimated water consumption in each quarter year, with a minimum rate per quarter year of $14.67 subject to discount. (242-67, 234-67, 245-67, 248-75, 44-77, 788-77) (810-80) (690-81)(722-82) (56-79) (32-80)

41. Where any type of water supply is not set out in the schedules to this by-law, the City Treasurer shall estimate the amount used, and the same rate shall be charged therefor as for water supplied on meter measurement. (176-72)

42. (242-67)

43. Where water is supplied on meter measurement to premises situated wholly outside the City of Toronto, the

owner or occupant of the premises supplied shall pay at the rate of $1.630 cents for each 1,000 gallons based on the total water consumption or estimated water consumption in each quarter year, with a minimum rate per quarter year of $14.67, subject to discount, or at the rate charged for water supplied on meter measurement by the municipality in which the premises are situated, subject to its discount, if any, whichever is higher. (242-67) (176-72) (245-74) (248-75) (44-75) (788-77) (56-79) (32-80) (810-80) (690-81) (722-82)

44. Where water is supplied to premises situated partly within and partly outside the City of Toronto, the rates payable shall be the same as for premises situated wholly within the City.

45. (1) For the purpose of collecting rates where water is supplied not on meter measurement, the City of Toronto, except Toronto Island, shall be divided into the districts set out in column 1 below, and the rates shall become due in each year in equal half-yearly instalments in advance on the respective dates set out opposite each district in column 2 below, as follows:

Column 1	Column 2
District No. 1: east of Don River:	First days of April and October
District No. 2: between the Don River and Yonge Street, including all premises supplied with water from a service on Yonge Street	First days of May and November
District No. 3: between Yonge Street and Bathurst Street, excluding all premises supplied with water from a service on Yonge Street, and including all premises supplied with water from a service on Bathurst Street:	First days of January and July
District No. 4: between Bathurst Street and Dufferin Street, excluding all premises supplied with water from a service on Bathurst Street, and including all premises supplied with water from a service on Dufferin Street:	First days of February and August
District No. 5: west of Dufferin Street, excluding all premises supplied with water from a service on Dufferin Street:	First days of March and September

2. The rates shall be payable in each year on or before the last day of the calendar month in which they become due.

46. (1) Where water is supplied not on meter measurement to premises on Toronto Island, the rates for each premises shall become due in each year on the first day of May for the half-year period ending on the thirty-first day of the following October, and on the first day of November for the half-year period ending on the thirtieth day of the following April. (176-72)

(2) The rates for each such half-year period shall be fifty per cent. of those set out in schedules A, B, and C to this by-law, provided that in each half-year period the minimum charge shall be $38.50, subject to discount. (242-67) (254-78) (248-75) (44-77) (788-78) (56-79) (690-81) (722-82)

(3) Such rates shall be payable in each year on the last day of the calendar month in which they became due or before the water is turned on, whichever occurs later, and shall not be subject to apportionment, remission or refund. (242-67)

47. Payment of rates imposed by this by-law shall be made at the Water Works Revenue Office or any office of any agent appointed by the City Council, provided that upon payment at an office of any such agent any collection charge shall be borne by the consumer.

48. (1) The rates charged on meter measurement shall become due quarterly on the last day of the quarter year in which the water has been supplied, namely, on the thirty-first day of March, the thirtieth day of June, the thirtieth day of September, and the thirty-first day of December, in each year.

(2) The rates shall be payable in each year on or before the last day of the calendar month next after that in which they become due.

49. (176-72)

50. The rates payable under section 44 of this by-law shall become due and be payable in advance on the dates set out in section 45 of this by-law for that district of which the premises served form part.

51. Unless otherwise indicated in this by-law, a discount of 10 per cent. shall be allowed on all Corporation rates paid in full within one calendar month of the dates on which they respectively become due. (242-67)

52. Where fixtures are used in common by the owners or occupants of two or more houses, or in duplex, triplex, or apartment houses, the rates shall be in accordance with the rates set out in schedule B to this by-law for fixtures.

53. (176-72)

54. The full amount of any rates due and payable may be collected from the owner or occupant by suit at law before any court of competent jurisdiction, or by distress and sale of the goods and chattels of such owner or occupant, or of any goods or chattels in his possession, wherever the same may be found within the City of Toronto, and County of York, or of any goods or chattels found on the premises, the property of, or in the possession of, any other occupant of the premises. Such distress and sale shall be conducted in the same manner as sales are conducted for arrears of city taxes, and the costs chargeable shall be those payable to bailiffs under The Division Courts Act; provided that the attempt to collect such rates by any process hereinbefore mentioned shall not in any way invalidate the lien or charge for rates upon such premises.

55. Whenever any departure from the prescribed rules is permitted in order to accommodate a consumer, the consumer shall first pay the expense of making the change.

56. Every person guilty of an offence under this by-law, other than the offence described in Section 18 hereof, shall forfeit and pay upon conviction a penalty not exceeding $300.00 (exclusive of costs) for each such offence, or may be imprisoned without the option of a fine for a term of not exceeding one month. (176-72)

57. The following are repealed:

(a) By-law No. 17098 of The Corporation of the City of Toronto, being "A By-law Respecting the Water Works and Rates", passed November 11, 1947, and all amendments thereto;

(b) By-law No. 2988 of The Corporation of the Village of Forest Hill, being "A By-law to Enact Rules and Regulations for the Maintenance and Operation of a System of Waterworks in the Village of Forest Hill" passed November 6, 1957 and all amendments thereto;

(c) By-law No. 962 of The Corporation of the Village of Swansea, being a By-law "To Provide Rules and Regulations for the construction, operation and maintenance of a water supply system in the Village of Swansea", passed July 31, 1944, and all amendments thereto; and

(d) All by-laws of The Corporation of the Village of Forest Hill or The corporation of the Village of Swansea, and all provisions of any by-laws of either of such Corporations, inconsistent with any of the provisions of this by-law:

provided that the repeal of the foregoing by-laws or provisions shall not affect any right, privilege, obligation or liability acquired, accrued, accruing or incurred under such by-laws or provisions.

58. This by-law shall come into force on the 1st day of January, 1967.

WILLIAM DENNISON,
Mayor.

C. E. NORRIS,
City Clerk.

COUNCIL CHAMBER
Toronto, February 15, 1967.
(L.S.)

SCHEDULE A

Dwelling houses: $4.90 per room per annum, subject to a minimum charge of $15.10 per annum. (245-74, 248-75, 44-77) (788-77) (56-79)(690-81)(722-82)

Rooming Houses: $8.60 per room per annum. (245-74, 248-75) (44-77) (788-77) (56-79) (690-81)(722-82)

The following rates are in addition to the above rates: (245-74, 248-75, 44-77, 788-77, 56-79, 690-81)(722-82)

		Per Annum
Basins	Each	$ 9.46
Baths	Each	9.46
Shower Baths	Not attached to bath tub, each	9.46
Sinks	Each	9.46
Urinals	Self-acting, each	11.26
	Not self-acting, each	46.70
Water Closets	Self-acting, each	15.10
	Not self-acting, each	48.62
Laundry Tubs	For pair of tubs (in one fixture)	9.02
	For single or additional tub, each	5.62
Washing Machines	Each	9.46

SCHEDULE B

Factories, office buildings, stores, garages, warehouses, and similar places of business: $15.10 for each flat per annum. (245-74, 248-75, 44-77, 788-77, 56-79, 690-81)(722-82)

Private hospitals, rest homes, schools, fraternity houses, clubs, hotels and similar places: $8.60 per room per annum. (245-74, 248-75, 44-77, 788-77, 56-79, 690-81)(722-82)

The following rates are in addition to the above rates in this schedule: (245-74, 248-75, 44-77, 788-77, 56-79, 690-81) (722-82)

		Per Annum
Basins	Each	$ 18.80
Baths	Each	18.80
Shower Baths	Not attached to bath-tub, each	18.80
Sinks	Each	18.80
Urinals	Self-acting, each	22.48
	Not self-acting, each	93.50
Water Closets	Self-acting, each	30.10

	Not self-acting, each	97.20
Laundry Tubs	For pair of tubs (in one fixture)	18.80
	For single or additional tub, each	9.46
Washing Machines	Each	18.80

SCHEDULE C

The following rates are in addition to the amounts set forth in Schedules A and B: (245-74, 248-75, 44-77, 788-77, 56-79, 690-81) (722-82)

		Per Annum $
Bakeries and Delicatessens	Average number of barrels of flour or parts thereof used per day for commercial purposes, each barrel	11.24
Baptistries	Each	6.38
Barber Chairs, Beauty Parlour Chairs	Each working chair	9.46
Church Buildings used as a place of worship	For each fixture in any such building so used coming within Schedule B, one-third of the rates in Schedule B.	
Dental Fountains	Each	46.70
Dish Washers	Each	37.48
Drinking Fountains	Each	18.80
Fish Tanks	Each	46.70
Fountains	For 1/16 inch orifice or less, each, per season	30.08
	All others, each, per season	119.72
Greenhouses	According to area of premises, for 500 square feet or under	3.80
	Over 500 square feet and under 1,000 square feet	5.62
	For every 1,000 square feet additional or part thereof	1.92
Horses	Horses for hire, or commercial purposes, kept on premises, each	15.10
	Other horses, each	9.46
Humidifiers	When connected to water and drain, each	15.10
Laundry Businesses	For each tub	9.52
	Additional Charges:	
	Where three hands or less employed	37.68
	Where four or five hands	

	employed	60.12
	Where six or seven hands employed	82.70
	Where eight hands or more employed	97.76
Materials used in buildings or in alterations or repairs to buildings or other construction work	Bricks, per 1,000	0.30
	Other masonry, including concrete blocks, tiles, and similar material, on basis of equivalent number of bricks to replace same, per 1,000 bricks	0.30
	Plastering, per 1,000 square yards	11.30
	Concrete, per cubic yard	0.78
	Minimum rate for each building or for repairs or alterations, where any of the above materials is used	3.80
Photographic Washing Tanks	Each	18.88
Potato Peelers	Each	37.68
Private Houses unoccupied or occupied only by caretaker with his family	Private houses of not less than twelve rooms, upon certificate of of the owner that he has placed a caretaker in charge, as follows: $4.02 per room per annum, plus additional rates for single bath, closet, and basin, as set out in Schedule A (245-74, 788-77, 56-79)	
Restaurants	Estimated average number of meals served per day, each	1.92
Steam Engines	Per horsepower	13.16
All other engines using water	Per horsepower	11.30
Syphons	Not self-acting, each	94.00
Trenches	Water for sinking trenches 6 feet deep and under, for each 100 feet length or part thereof	3.80
	Over 6 feet deep, for each 100 feet length or part thereof	7.48
Vegetable Fountain or Sprays	Each	11.30
Washing Machines (water-power)	Each	46.78
Wash Racks	Each	93.52

2. This by-law shall take effect upon, from and after January 1, 1983, and, subject to section 3, where an owner or occupant of premises has prior to the end of December , 1982, paid or been billed for rates for a period ending subsequent to December 31, 1982, such owner or occupant shall pay the increase in rates effected by section 1 of this by-law in

respect to the portion of the period after December 31, 1982, in the same proportion as the portion of the period after December 31, 1982, bears to the whole period; and such increase shall be due and payable at the same time as such owner's or occupant's next half-yearly instalment of rates becomes due and payable. (690-81) (722-82)

3. The increased rates effected by section 1 of this by-law for water supplied on meter measurement shall become effective in each case after the meter has been read for the months of December, 1982 or January, 1983 and shall become due on the 31st day of March, 1983. (690-81) (722-82)

Exhibit B

An Act to authorize the Corporation of the City of Toronto

to construct Water Works in the City of Toronto.

35 Victoria Chapter 79 Ontario, 1872.

CAP. LXXIX.

An Act to authorize the Corporation of the City of Toronto to construct water works in the City of Toronto.

[*Assented to 2nd March*, 1872.]

Preamble.

WHEREAS grave and frequent complaints have been made from time to time, by the citizens and Corporation of Toronto, against the quality and supply of water furnished by the Toronto Water Works Company, hitherto existing and supplying water to the city; and grievous and serious injury to property and to the city generally has resulted from an undue and insufficient service thereof; and whereas numerous amendments have been made to the charter of the said Toronto Water Works, with the view to making the same more useful and effective, for the purposes intended; and to enable the Corporation of the City of Toronto to satisfy the citizens as to the service of water procurable from said company; and whereas after much treaty and negotiation between the said City of Toronto and the said Water Works Company, it has been found impossible to effect any satisfactory arrangement with said Water Works Company on behalf of the said corporation and citizens of Toronto; and whereas the Council of the Corporation of the City of Toronto, have by petition declared that it is deemed necessary and advisable that the said Corporation of Toronto should have the power to purchase, construct, have and manage, as to them may seem meet, certain water works on behalf of the city of Toronto; and it is expedient to grant the prayer of said petition:

Therefore Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

Corporation of Toronto may construct, etc., Water Works.

1. That the Corporation of the City of Toronto, by and through the agency of commissioners and their successors, to be elected and appointed, as hereinafter provided, may, and shall have power to design, construct, build, purchase, improve, hold, and generally maintain, manage, and conduct water works, and all buildings, matters, machinery and appliances therewith connected or necessary thereto, in the City of Toronto, and parts adjacent, as hereinafter provided.

Commissioners of the works incorporated;

Powers.

2. The said commissioners and their successors, shall be a body corporate, under the name of the "Water Works Commission for the City of Toronto;" and shall be composed of five members, of whom the Mayor of the City of Toronto, for the time being, shall be *ex-officio*, one; and the said commissioners shall have all the powers necessary to enable them to build the water works hereinafter mentioned; or to purchase, and after purchase to add thereto, or otherwise deal with the water

water works of any other company, and to improve, secure, maintain, and enlarge any of the said works, from time to time, as to the said commissioners may seem meet, and to carry out all and every the other powers conferred upon them by this Act.

Duty of Commissioners.

3. And it shall be the duty of the said commissioners to examine, consider and decide upon all matters relative to supplying the said City of Toronto, by the means contemplated, by this Act, with a sufficient quantity of pure and wholesome water for the use of its inhabitants; and also to provide, build, or construct the necessary water works, buildings, machinery and other appliances requisite for the said object.

Powers.

4. The said commissioners shall have power to employ and appoint engineers, surveyors, officers, and other persons; and to rent or purchase such lots, works, buildings, privileges and yards, as in their opinion may be necessary to enable them to fulfil their duties under this Act.

Powers.

5. And it shall and may be lawful for the said commissioners, their agents, servants and workmen, from time to time, and at such times hereafter as they shall see fit, and they are hereby

Entry on lands

authorized and empowered to enter into and upon the lands of any person or persons, bodies politic or corporate, in the city of Toronto, or within thirty miles of the said city; and to survey, set out, and ascertain such parts thereof as they may require for the purposes of the said water works; and also to

Appropriate streams; Contract.

divert and appropriate any spring or stream of water thereon, as they shall judge suitable and proper; and to contract with the owners or occupiers of the said lands, and those having an interest or right in the said water, for the purchase thereof, or of any part thereof, or of any privilege that may be required for the purposes of the said water works commissioners; and in case of any disagreement between the said commissioners and the owners or occupiers of such lands, or any persons having an interest in the said water, or the natural flow thereof, or any such privilege as aforesaid, respecting the amount of purchase or value thereof, or as to the damages such appropriation shall cause to them or otherwise, the same shall be

Arbitration.

decided by three arbitrators, to be appointed as hereinafter mentioned—namely, the commissioners shall appoint one, the the owner or owners shall appoint another, and such two arbitrators shall, within ten days after their appointment, appoint a third arbitrator; but in the event of such two arbitrators not appointing a third arbitrator within the time aforesaid, the Judge of the County Court of the County of York, shall, on application by either party, appoint such third arbitrator. In case any such owner or occupier, shall be an infant, married woman, or insane, or absent from this Province, or shall refuse to appoint an arbitrator on his behalf, then, the Judge of the County Court of the County of York, on application being made

made to him for that purpose by the commissioners, shall nominate and appoint three indifferent persons as arbitrators. The arbitrators to be appointed as hereinbefore mentioned, shall award, determine, adjudge and order the respective sums of money which the said commissioners shall pay to the respective persons entitled to receive the same, and the award of the majority of the said arbitrators shall be final. And the said arbitrators shall be, and they are hereby required to attend at some convenient place, at or in the vicinity of the said city, to be appointed by the said commissioners, after eight days' notice given for that purpose by the said commissioners, then and there to arbitrate and award, adjudge, and determine such matters and things as shall be submitted to their consideration by the parties interested; and each arbitrator shall be sworn before some one of Her Majesty's Justices of the Peace, in and for the said County of York, or the said city, any of whom may be required to attend the said meeting for that purpose, well and truly to assess the value or damages between the parties to the best of his judgment; Provided always, that any award under this Act shall be subject to be set aside on application to the Court of Queen's Bench, or Common Pleas, in the same manner and on the same grounds as in ordinary cases of arbitration, in which case a reference may be again made to arbitration as hereinbefore provided, and that any sum so awarded shall be paid within three calendar months from the date of the award or determination of any motion to annul the same; and in default of such payment the proprietor may resume possession of his property, and all his rights shall thereupon revive; and the award of a majority of the said arbitrators shall be binding on all parties concerned subject as aforesaid; Provided always, that upon the application of any person injuriously affected by the works of the said company by the withdrawal thereby of the water from any river, stream or lake, so as to leave an insufficient quantity for the agricultural or other purposes of the proprietors or occupants of the lands through, or on which such rivers, streams or lakes may pass or be, the Court of Chancery may grant injunctions to restrain the said company from the use of the water of such river, stream or lake for such time, and upon such conditions as the Court shall direct.

Lands appropriated vested in the city. Powers to convey water.

6. The lands, privileges and water, which shall be ascertained, set out or appropriated by the said commissioners for the purposes thereof as aforesaid, shall thereupon and forever thereafter be vested in the Corporation of the City of Toronto, and their successors; and it shall and may be lawful for the said commissioners and their successors, to construct, erect and maintain in and upon the said lands all such reservoirs, water works and machinery requisite for the said undertaking, and to convey the waters thereto and therefrom, in, upon or through any of the grounds and lands lying intermediate between the said reservoirs and water works, and the springs, streams, rivers or lakes

lakes from which the same are procured, and the said City of Toronto, by one or more lines of pipes, as may from time to time be found necessary; and for better effecting the purposes aforesaid, the said commissioners, their successors and servants, are hereby empowered to enter and pass upon and over the said grounds and lands intermediate as aforesaid; and the same to cut and dig up if necessary, and to lay down the said pipes through the same, and in, upon, over, under and through the highways, railways, and roads of and in the townships of Etobicoke, York and Scarboro', and the incorporated village of Yorkville, in the county of York, and in, through, over and under the public ways, streets, street railways, lanes, or other passages of the said city of Toronto, and in, upon, through, over or under the lands, grounds and premises of any person or persons, bodies corporate, politic, or collegiate, whatsoever; and to set out, ascertain, use and occupy such part or parts thereof, as they, the said commissioners, or their successors shall think necessary and proper, for the making and maintaining of the said works, or for the opening of new streets required for the same; and for the purchasing of any lands required for the protection of the said works, or for preserving the purity of the water supply, or for taking up, removing, altering, or repairing the same, and for distributing water to the inhabitants of the City of Toronto, or for the uses of the corporation of the said city, or of the proprietors or occupiers of the lands through or near which the same may pass; and for this purpose to sink and lay down pipes, trunks, reservoirs, and other conveniences, and from time to time to alter all or any of the said works, as well in the position as in the construction thereof, as to the said commissioners or their successors shall seem meet, doing as little damage as may be in the execution of the powers hereby granted to them, and making reasonable and adequate satisfaction to the proprietors, to be ascertained, in case of disagreement, by arbitration as aforesaid; and all such water works, pipes, erections and machinery requisite for the said undertaking, shall likewise be vested in, and be the property of the Corporation of the City of Toronto.

Enter on lands

Works vested in the city.

Penalties for injury to.

7. If any person shall wilfully or maliciously hinder or interrupt, or cause, or procure to be hindered or interrupted, the said commissioners or their managers, contractors, servants, agents or workmen, or any of them, in the exercise of any of the powers and authorities in this Act authorized and contained, or if any person shall wilfully or maliciously let off or discharge any water, so that the same shall run waste or useless out of the said works, or if any person shall throw or deposit any injurious, noisome or offensive matter into the said water or water works, or upon the ice, or in any way foul the same, or commit any wilful damage or injury to the works, pipes or water, or encourage the same to be done, every person offending in any of the cases aforesaid shall, on conviction thereof, before any justice of the peace, having jurisdiction within the locality where

where the offence shall be committed, forfeit and pay for every such offence the sum of twenty dollars, together with the costs of conviction, one-half to be applied to the use of the commissioners, for water works purposes, and the other half to him or her who shall lay the information; and in case the parties suing for the same shall be commissioners themselves, or any of their servants, officers, agents, or workmen, then the whole of the said penalty shall be applied to the uses of the commissioners for water works purposes; and such justice may also, in his discretion, further condemn such person to be confined in the common gaol of the City of Toronto or County of York for a space of time not exceeding one calendar month, as to such justice shall seem meet; and such person or persons so offending shall be liable to an action at law, at the suit of the commissioners, to make good any damage done by him, her or them.

Materials for work exempted from execution

8. All materials procured or partially procured under contract with the commissioners, and upon which the said Commissioners shall have made advances in accordance with such contract, shall be exempt from execution.

Accounts to be kept by Commissioners.

Returns to the city.

9. That the said commissioners shall be, and they are hereby required to keep, or cause to be kept separate books and accounts of the receipts and disbursements for and on account of the said water works, distinct from the books and accounts relating to the other property, funds or assets belonging to the said water works; and all such books shall be open to the examination of any person or persons appointed for that purpose by the Corporation of the City of Toronto, or any member of the said corporation; and shall annually on or before the first day of December in each and every year, cause a return to be made to the Council of the Corporation of the City of Toronto, shewing a statement of the affairs of the said water works, wherein shall be stated the amount of the rents, issues and profits arising from the said water works, the number of tenants supplied with water, the extent and value of the moveable and immoveable property thereunto belonging, the amount of debentures then issued and remaining unredeemed and uncancelled, and the interest paid thereon or yet due and unpaid, and the state of the sinking fund; the expenses of collection and management, and all other contingencies; salaries of officers and servants, the costs of repairs, improvements and alterations, the prices paid for the acquisition of any real estate that may be acquired for the use of the said water works, and generally such a statement of the revenue and expenditure of the said water works as will at all times afford to the citizens of the said City of Toronto a full and complete knowledge of the state of affairs of the said water works, and such information as may be required by the Corporation of the City of Toronto, and in order that all the accounts relating to the said water works may be audited by the auditors of the said Corporation in regular course.

Oaths of Office Records of proceedings.

10. The said commissioners and the clerks employed in their revenue shall be sworn before a justice of the peace to the faithful performance of their duties, and they shall keep a book for the purpose of recording the whole of their official proceedings; which said book shall be open for inspection, as the books in the preceding section mentioned.

Powers as to use of water.

11. The board of commissioners, for the time being, shall regulate the distribution and use of the water in all places and for all purposes where the same may be required; and from time to time shall fix the prices for the use thereof, and the times of payment; and they may erect such number of public hydrants, and in such places as they shall see fit, and direct in what manner and for what purpose the same shall be used, all which they may change at their discretion; Provided always that all hydrants, conduits or other appliances which the Corporation of the City of Toronto may require under this Act for the purpose of extinguishment of fires shall be placed as the Corporation of the City of Toronto shall direct, and shall be under their exclusive control and direction when erected.

Water rates.

12. The commissioners shall have power and authority, and it shall be their duty, from time to time, to fix the price, rate, or rent which any owner or occupant of any house tenement, lot, or part of a lot, or both, in, through, or past which the water pipes shall run, shall pay as water rate or rent, whether such owner or occupant shall use the water or not, having due regard to the assessment and to any special benefit and advantage derived by such owner or occupant, or conferred upon him or her or their property by the water works, and the locality in which the same is situated: and such water rate or rent as shall be assessed by such commissioners upon such owner or occupant, shall be, and continue a lien or charge, unless paid, upon such real estate; and the water commissioners shall also have power and authority, from time to time, to fix the rate or rent to be paid for the use of the water by hydrants, fire-plugs and public buildings; Provided always, unless the existing works of the Metropolitan Water Works Company or the City of Toronto Water Works Company, shall be purchased from the said company, or otherwise obtained by the said Corporation of the City of Toronto, no compulsory rate or rent shall be levied or collected in any portions of the city, where the pipes of the said water works are now laid.

Lien for rates.

Water rates lien on property.

Rates paid to be paid to Chamberlain. Powers to enforce by-laws.

13. All water rents and water rates, when collected, less disbursements by the commissioners, shall be paid over monthly by the said commissioners to the chamberlain of the City of Toronto, and by him placed to the credit of the water works account: And the commissioners shall have power, from time to time, to make and enforce all necessary by-laws, rules and regulations for the general maintenance or the management

management and conduct of the said water works, officers and others employed by them, not inconsistent with this Act, and for the collection of the said water rent and water rate, and for fixing the time and times, (which shall be quarterly) when, and the places where, the same shall be payable; also for allowing a discount for pre-payment, and, in case of default in payment, to enforce payment by shutting off the water, or by suit at law before any court of competent jurisdiction, or by distress and sale of the goods and chattels of such owner or occupant, or of any goods or chattels in his possession, wherever the same may be found within the City of Toronto and County of York, or of any goods or chattels found on the premises, the property of, or in the possession of, any other occupant of the premises; such distress and sale shall be conducted in the same manner as sales are now conducted for arrears of city taxes, and the costs chargeable shall be those payable to bailiffs under the Division Court Act; Provided that the attempt to collect such rates by any process hereinbefore mentioned shall not in any way invalidate the lien upon such premises.

To enforce payment.

14. The commissioners shall have power, with the consent of the Corporation of Toronto, to employ the city collectors, assessors and such other persons as in their opinion may be necessary to carry out the object of this Act, and to specify the duties of such persons so employed, and to fix their compensation; and such persons shall hold their offices under the commissioners, at the pleasure of the commissioners, or as they shall determine by by-law in that behalf, and shall give such security as the commissioners shall from time to time require; and such collectors or assessors shall have as full power in the performance and enforcement of the matters to them committed as the collectors and assessors in the cities of the Province of Ontario do now possess and enjoy.

Power to employ city collectors and others.

15. If any person or persons shall lay or cause to be laid any pipe or main to communicate with any pipe or main of the said water works, or in any way obtain or use any water thereof without the consent of the commissioners, he or they shall forfeit and pay to the commissioners for water works purposes the sum of one hundred dollars, and also a further sum of five dollars for each day such pipe or main shall so remain, which said sum, together with costs of suit in that behalf, may be recovered by civil action in any court of law in the Province having civil jurisdiction to that amount.

Penalty for drawing off water.

16. If any person shall bathe or wash or cleanse any cloth, wool, leather, skin or animals, or place any nuisance or offensive thing within the distance of three miles from the source of supply for such water works, in any lake, river, pond, source or fountain from which the water of the said water works is obtained; or shall convey or cast, cause or throw, or put

Penalty for fouling water.

put any filth, dirt, dead carcasses or other noisome or offensive things therein, or within the distance as above set out, or cause, permit or suffer the water of any sink, sewer or drain to run or to be conveyed into the same, or cause any other thing to be done whereby the water therein may be in any wise tainted or fouled, every such person shall on conviction thereof before any justice of the peace, on the oath of one credible witness, be by such justice adjudged and condemned to pay a penalty for every such offence not exceeding twenty dollars, together with costs, one half to be applied for water works purposes, and the other half to him or her who shall lay the information, and in case the party laying such information be the commissioners themselves or any of their officers or servants, then the whole of the said penalty shall be applied to the uses of the commissioners for water works purposes, and each justice shall also in his discretion further condemn such person to be confined in the common gaol for a space of time not exceeding one calendar month, with or without hard labour, as to him may seem meet.

Penalty for wrongfully using water.

17. It shall and may be lawful for the commissioners, and they are hereby authorized and empowered to make such by-laws as to them shall seem requisite and necessary for prohibiting by fine not exceeding twenty dollars for water works purposes, or imprisonment not exceeding one calendar month (the amount of such fine and duration of such imprisonment, and also the option between fine and imprisonment, with or without hard labour, being always in the discretion of the justice of the peace before whom any proceeding may be taken for enforcement thereof,) any person being occupant, tenant or inmate of any house supplied with water from the said water works from vending, selling or disposing of the water thereof, from giving it away or permitting it to be taken or carried away, or from using or applying it to the use or benefit of others, or to any other than to his, her or their own use and benefit, or from increasing the supply of water agreed for with the said commissioners, or from wrongfully neglecting or improperly wasting the water, as also for regulating the time, manner, extent and nature of the supply by the said works, the tenement or parties to which and to whom the same shall be furnished, the price or prices to be exacted therefor, and each and every other matter or thing relating to or connected therewith, which it may be necessary or proper to direct, regulate or determine for issuing to the inhabitants of the city, a continued and abundant supply of pure and wholesome water, and to prevent the practising of frauds upon the commissioners with regard to the water so supplied.

Vacant spaces chargeable.

18. In all cases where a vacant space intervenes between the line of the street and the wall of the building into which the water is to be taken the commissioners are empowered to lay the service-pipe across such vacant space and charge the cost of

of the same to the owners of the premises, such charge to be payable with the first payment of water rates and to be collected in the same manner from the said owners.

Service pipes, stop cocks, etc

19 The service-pipe from the line of the street to the interior face of the outer wall of the building supplied together with all branches, couplings, stopcocks and apparatus placed thereon by the commissioners shall be under their control; and if any damage be done to this portion of the service-pipe or its fittings either by neglect or otherwise the commissioners may repair the same and charge the same to the occupant or owner of the premises; the stopcock placed by the commissioners inside of the wall of the building shall not be used by the water tenant except in cases of accident or for the protection of the building or the pipes and to prevent flooding of premises.

Taps.

20. All parties supplied with water by the commissioners may be required to place only such taps for the drawing and the shutting off the water as may be approved of by the commissioners.

Non-liability for breakage.

21. Neither the water commissioners nor the corporation of the city shall be liable for damages caused by the breaking of any service-pipe or attachment or for any shutting off of the water to repair mains or to tap the pipes, provided notice be given of the intention to shut off the water when the same is shut off more than six hours at any one time.

Right of access.

22. It shall be lawful for the officers of the water commissioners and every person authorized by them for that purpose to have free access at proper hours of the day and upon reasonable notice given and request made for that purpose to all parts of every building in which water is delivered and consumed.

Penalty for injuries.

23. If any person or persons not being in the employment of the water commissioners or not being a member of the fire brigade of the said city and duly authorized in that behalf shall wilfully open or close any hydrant or obstruct the free access to any hydrant, stopcock, chamber or hydrant chamber by placing on it any building material, rubbish or otherwise, every such person shall on conviction before any of Her Majesty's justices of the peace forfeit and pay for each offence a sum not exceeding twenty dollars for water works purposes, or in default of payment be imprisoned in the gaol of the county for a term not to exceed thirty days, and each time the said hydrants are so interfered with and each day said obstruction shall continue shall be considered a separate offence.

Quorum.

24. A majority of said commissioners shall constitute a quorum for the transaction of any business allowed or required by virtue of this Act.

25. The said commissioners shall have the full, entire and exclusive

Powers to manage, prosecute, etc.

clusive possession, control and management of the said lands and water works and all things appertaining thereto; and shall and may in the name of the commissioners of water works for the City of Toronto prosecute or defend any action or actions, suit or suits, or process at law or in equity against any person or persons for money due for the use of the water, for the breach of any contract, express or implied, touching the execution or management of the works or the distribution of the water, or of any promise or contract made to or with them and also for any injury, damage, trespass, spoil, nuisance or other wrongful act done, committed or suffered to the said lands, works, water courses, sources of water supply, pipes, machinery or any apparatus belonging to or connected with any part of the works, or for any improper use or waste of the water or for anything otherwise arising out of their said office as commissioners.

Powers of extension in suburbs.

26. The water commissioners are hereby empowered to arrange with the corporation or with individuals for the extension of pipes in suburbs or partially built portions of the city by allowing a deduction from the price charged for the water to such extent as the commissioners shall see fit on the cost of the said pipes when laid by the parties under the direction of the commissioners and subject to their approval, or the commissioners may lay the pipes charging the said parties in addition to the usual water rate a yearly interest upon the cost of such extension, which interest or such portion thereof as shall then be due shall be paid at the same time and collected in the same manner as the water rates.

Powers to supply outside Toronto.

27. The water commissioners shall have power and authority to supply any corporation, person or persons with water, although not being resident within the City of Toronto, and may exercise all other powers necessary to the carrying out of their agreements with such corporations or persons as well within the Townships of York, Scarborough and Etobicoke, as within the City of Toronto; and they may also from time to time make and carry out any agreement which they may deem expedient for the supply of water to any railway company or manufactory provided that no power or authority shall be exercised under this clause without the consent and approbation of the Corporation of the City of Toronto.

Protection in exercise of office.

28. The commissioners and their officers shall have the like protection in the exercise of their respective offices and in the execution of their duties as justices of the peace now have under the laws of this Province.

Power to issue debentures.

29. For the purpose of constructing the said water works, and paying the interest on the said debentures during the progress of the works and expenses attendant thereon, or for the purpose of meeting the payment of any other matter or thing contemplated or allowed by this Act, the Corporation of the City

City of Toronto shall have power to issue debentures of the said Corporation of the City of Toronto to be called Water Works Debentures, for a sum of money not exceeding five hundred thousand dollars, of lawful money of Canada, in such sums not less than one hundred dollars, or twenty pounds sterling money, as shall to the said corporation seem expedient, which debentures shall be made payable in manner and at the times following, that is to say: within a period of thirty years from the date of the respective issues thereof, and shall bear interest after the rate of five, six or seven per centum per annum, such interest to be payable half yearly; and such debentures shall be signed by the mayor and chamberlain of the said city for the time being, and may be made payable either in sterling or currency in this Province, Great Britain, or elsewhere, as to the council of the Corporation of the City of Toronto shall seem expedient or necessary: and the said council of the Corporation of the City of Toronto and their successors shall, for the purpose of providing a sinking fund for the payment of the said debentures as aforesaid, and the interest on same semi-annually, raise annually after the completion of the said works, or at the expiration of three years from the date of the first issue of such debentures such sum as may be necessary to pay the interest upon and provide a sinking fund to meet the whole of such debentures in full as the same shall become due, respectively, and shall order a rate for that purpose to be settled, imposed and levied in each and every year to pay said principal and interest on such debentures, and it shall not be necessary to obtain the consent or approval of the Lieutenant-Governor of this Province in council, before contracting the said debt, but the said debentures to be issued hereunder shall be valid and effectual and binding to all intents and purposes on the Corporation of the City of Toronto, notwithstanding any of the provisions of the Municipal Act, or of any other Act or Acts in that behalf, have not been complied with.

Dealing with debentures.

30. Such debentures, when issued, shall be deposited in some of the chartered banks having an office at Toronto, and the proceeds of such debentures shall be paid into some chartered bank and kept separate from any other funds of the said city, and the same shall only be paid out on the cheque of the mayor and chamberlain, for the time being, of the City of Toronto, and the chairman, for the time being, of the said board of water commissioners as may, from time to time, be required for the payment and discharge of the liabilities that may be incurred in carrying out the improvements contemplated by this Act, and for the payment of interest accruing due on the said debentures during the period of the erection and completion of the said water works; Provided also that nothing herein contained shall prevent the commissioners, should they deem it advantageous so to do, from paying the contractor or contractors or others in debentures, either at par or at such rate of discount as the commissioners shall, in their judgment, deem advisable, with

with the assent of the Corporation of the City of Toronto thereto, nor from selling or negotiating the same, as to them may seem most expedient and advantageous to the interests of the City of Toronto.

Preferential lien.

31. The said water works to be erected and constructed under this Act, and also the land to be acquired for the purposes thereof, and every matter and thing therewith connected shall be, and they are hereby specially charged, pledged, mortgaged and hypothecated for the repayment of any sum or sums which may be borrowed by the said corporation for the purposes of this Act, as well as for the due and punctual payment of the interest thereupon; and all, each and every of the holders of the debentures in the last previous section mentioned shall have a preferential pledge, mortgage, hypothec or privilege on the said lands, water works and property appertaining thereto for securing the payment of the said debentures and the interest thereon.

Application of revenue.

32. That after the construction of the works all the revenues arising from or out of the supplying of water, or from the real or personal property connected with the said water works to be acquired by this said corporation or commissioners under this Act shall, after providing for the expenses attendant upon the maintenance of the said water works be paid over to and deposited monthly with the chamberlain of the said Corporation of the City of Toronto, as hereinbefore provided, and shall make part of the general funds of the corporation, and may be applied accordingly.

Power of the City to borrow not diminished.

33. That nothing in this Act contained shall extend or be construed to extend to diminish the power and authority of the corporation aforesaid hereafter to borrow on the credit of the said city, for the general uses and purposes of the said city, as fully and effectually as though the said city were not indebted for the building of the water works as aforesaid, or that debentures had not been issued by them for the amount, or as if this Act had not been passed, any Act, statute or law or provision thereof to the contrary notwithstanding.

Taxation, exemption from.

34. The lands, buildings, machinery, reservoirs, pipes and all other real or personal property connected with, or appertaining or belonging to the water works, shall, from henceforth, be exempt from taxation.

Actions, limitations for.

35. If any action or suit shall be brought against any person or persons, for anything done in pursuance of this Act the same shall be brought within six calendar months next after the Act committed, or in case there shall be a continuation of damages, then within one year after the original cause of such action arising.

Officers to be officers of the peace.

36. The watchman and other officers of the water commissioners, when in discharge of their duty, shall be *ex-officio* possessed of all the powers and authority of officers of the peace.

By-law for construction to be submitted to electors.

37. This Act shall not have any force or effect until the council of the Corporation of the City of Toronto shall pass a by-law authorizing the construction of the said water works; and, on the said by-law being finally passed, it shall be lawful for the mayor of the said city, and he is hereby authorized and required, within fifteen days after the passage of said by-law, to issue his warrant, under the corporate seal, requiring the senior returning officer for each ward in the said city appointed to hold the last municipal election for each of the said wards, or any other person duly appointed to that office to hold an election of the water commissioners for each electoral division of the said city, each of whom who shall be possessed in his own right or in right of his wife of a legal or equitable freehold within the City of Toronto of the value of three thousand dollars, over and above all incumbrances, or six thousand dollars in leasehold estate, and who shall, before taking office, make oath to such qualification before some justice of the peace of the City of Toronto or in the County of York, and those persons only who would be, by the municipal law, authorized to vote at municipal election for Alderman, shall be entitled to vote for the said Water Commissioner in their electoral division; the returning officer shall hold such election at furthest within eight days after receiving the warrant, and shall, at least four days before the election, post up a public notice thereof, under his hand, in at least four of the most public places in each ward for the electoral division in which the election is to be held, and the proceedings at any such election shall otherwise be in accordance with the requirements of the Municipal Institutions Act in case of Municipal Elections.

Commissioners, number of, salary, etc.

38. There shall be five commissioners, of whom the mayor of the City of Toronto shall be *ex-officio* one, and four of whom shall be elected by the citizens, two from each electoral division of the City of Toronto, as at present defined, in manner and for the term hereinafter mentioned and provided, and each of whom during the construction of the said works shall receive the sum of one thousand two hundred and fifty dollars per annum, except the president or chairman of such commissioners, who shall receive the sum of two thousand dollars per annum, and who shall be elected from amongst the said commissioners at the first meeting after their appointment or election, by a vote of the majority of the said commissioners; and after the completion of the said works, the remuneration of the said commissioners shall be such as the Council of the Corporation of the City of Toronto may by by-law determine.

Term of office and election of Commissioners

39. The said water commissioners, except as herein otherwise provided, shall hold office for the term of two years, and shall

shall be elected to the said office at the same time and in the same manner as aldermen; and all the provisions and remedies of the several Municipal Acts, and any amendments thereto, shall apply in all particulars, not inconsistent with this Act, as to elections, unseating, filling vacancies, grounds of disqualification and such other provisions as may be contained in such Acts; Provided that the commissioners first elected and appointed, as above provided, shall hold office until the third Monday in January, A.D. one thousand eight hundred and seventy-four, and thereafter shall be elected every second year, except the mayor for the time being, who shall thereafter be appointed *ex-officio* from year to year, and any alderman shall be eligible for election as a water commissioner, and any water commissioner for alderman.

Time for completion.

40. The said works shall be constructed, completed or finished within three years from the passing of said by-law by the said Corporation of the City of Toronto.

Work to be by contract.

41. All work under the commissioners shall be performed by contract.

No Commissioner to be interested.

42. No commissioner or alderman shall personally have or hold any contract in connection with said works, or be directly or indirectly interested in the same or any of them.

When Commissioners may purchase.

43. The said commissioners shall not purchase or acquire any existing water works, or make any other purchase where the amount involved shall exceed one hundred thousand dollars, without the consent of the Council of the Corporation of the City of Toronto.

Exhibit C

By-law No. 885, November 4, 1878

No. 885. A BY-LAW

To establish a Tariff of Water Rents or Rates.

WHEREAS it is expedient to establish a reduced and more equitable tariff of the rates or rents to be paid by parties using the water supplied by the Toronto Water Works, in order to bring the same within the means of the entire community, and induce all parties to avail themselves of the advantages arising from the institution of said works:

Therefore the Council of the Corporation of the City of Toronto enact as follows:

I.

The several rates or rents enumerated in Schedule A, hereunto annexed, are hereby imposed and levied for water supplied, or ready to be supplied, from the Toronto Water Works.

II.

The said rates or rents shall be payable at the Water Works branch of the City Treasurer's Department, in four equal quarterly instalments in advance, on the first days of January, April, July, and October in each year, except as hereinafter mentioned with regard to parties whose use of water is regulated by meter.

III.

A discount of thirty-three and a third per cent., or one-third, shall be allowed to parties paying the said rates or rents within the first month of each current quarter, except in the case of parties whose use of water is regulated by meter, and whose payment to entitle them to said discount must be made within the first month of the ensuing quarter; no discount shall be allowed unless the payments be strictly made within the times specified.

I certify that I have examined this Bill, and that it is correct.

ROBERT RODDY,
City Clerk.

COUNCIL CHAMBER,
Toronto, November 4th, 1878.

[L. S.] ANGUS MORRISON,
Mayor

SCHEDULE A.

TORONTO WATER WORKS.

Scale of Water Rates for Dwellings.

Taking $6 00 per annum, the lowest rate, and rising $1 00 for each additional room and for each additional inmate.

No. of Rooms.	NUMBER OF INMATES.															
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$	$
4	6	7	8	9	10											
5		8	9	10	11											
6		9	10	11	12	13										
7		10	11	12	13	14										
8		11	12	13	14	15	16									
9		12	13	14	15	16	17	18								
10		13	14	15	16	17	18	19	20							
11		14	15	16	17	18	19	20	21	22						
12		15	16	17	18	19	20	21	22	23	24					
13		16	17	18	19	20	21	22	23	24	25	26				
14		17	18	19	20	21	22	23	24	25	26	27	28			
15		18	19	20	21	22	23	24	25	26	27	28	29	30		

The rates are all payable quarterly in advance; and if paid within the first month of the quarter a deduction of 33⅓ per cent. will be made from the above.

Special and Additional Rates.

All conveniences in connection with dwelling and other houses are chargeable, in addition to the foregoing rates, for an ordinary supply.
The note, with regard to the per centage, applies to these rates also.

	Nature of Service.	Per Annum.
		$ c.
Baths	In private dwelling houses:	
	Hot or hot and cold water	5 00
	Each additional	3 00
	Cold	3 00
	Each additional	2 00
	In other than private dwellings:	
	Hot or hot and cold	10 00
	Each additional.....	6 00
	Cold	6 00
	Each additional.....	4 00
Water Closets.....	In private dwellings:	
	Self acting	5 00
	Each additional.....	2 00
	In other than private dwellings:	
	Self-acting.....	10 00
	Each additional	6 00
Urinals.....	In private dwellings:	
	Self acting	5 00
	Each additional	3 00
	Every other description	6 00
	In other than private dwellings:	
	Self acting	6 00
	Each additional.....	4 00
	Every other description	10 00
Basins	In private dwellings:	
	For the first	2 00
	Each additional.....	1 00
	In other than private dwellings:	
	For the first	3 00
	Each additional.....	1 50
Pantry	Pantry taps with sink:	
	Same scale of charges as for Basins.	

Special and Additional Rates—*Continued.*

	Nature of Service.	Per Annum.
		$ c.
Laundry.....	For the first tub.....	2 00
	For each additional	1 00
Washing Windows, etc...	Washing the fronts of houses and windows and for sprinkling sidewalks, for the season:	
	30 feet frontage and under	4 00
	60 feet frontage and under	6 00
	For each additional 30 feet or portion thereof	1 00
	Boarding houses:	
	For each boarder in addition to the charge for the family.....	2 00
Bars and Saloons...	For the use of the water in the bar:	$16 to 24 00
Hotels, etc..	Hotels, Manufactories and other large consumers to pay 50 cents per 1,000 gallons on the estimated quantity of water used or to be metered.	
	Warehouses, Manufactories, etc.:	
	Each flat.....	3 00
	Each Hand.....	0 30
	Schools:	
	Boarders same as for boarding houses.	
	Day Scholars, each	0 30
Stables.....	Private:	
	For the first horse	3 00
	Each additional	2 00
	Each vehicle	1 00
	Other than private:	
	For the first horse	3 00
	Each additional horse	2 00
	Each vacant stall	1 00
	Each vehicle	2 00

Special and Additional Rates—*Continued.*

	Nature of Service.	Per Annum.
		$ c.
Cows	For the first	1 00
	Each additional	0 80
Horse Troughs	Used at public houses, &c., per month	1 50
Forges	For the first fire	4 00
	Each additional	3 00
Barbers	For the first chair	4 00
	Each additional	3 00
Bakers	Bread and pastry:	
	Each barrel of flour used per day	5 00
	Biscuit and cracker:	
	Each barrel of flour used per day	3 00
Building	Per 1,000 brick	0 10
	Masonry, per toise	0 05
	Plastering (2 coats) per 1000 yards	5 00
	Mortar Beds, per barrel	0 03
Fountains	For 1/16 inch jet, the season	10 00
	For 1/8 inch jet, the season	20 00
	For 1/4 inch jet, the season	40 00
	6 hours per day allowed.	
Soda-water Fountains	The Season	10 00
	Vegetable Fountains, the season	5 00
Breweries	Where not metered:	
	For each barrel brewed	0 05
Distilleries	Where not metered:	
	For each barrel	0 10
St'm Engines	10 horse-power and under, each	7 00
	Each additional h.-p. from 10 to 25	6 00
	" " over 25	5 00

All Hydraulic Hoists or Elevators shall be provided with approved registering gear, by way of meter, to indicate the quantity used for running the same.

For any supplies not enumerated in the above, special assessments will be made or meters used.

Rates charged for Sprinkling Lawns and Grass Plots.

Season from 1st May to 30th September.

	1,000 square feet (and under), per season					...	...	$4 00
Above	1,000	and up to	2,000,	per season		...	...	5 00
"	2,000	"	3,000	"		...	...	5 50
"	3,000	"	4,000	"		...	...	6 00
"	4,000	"	5,000	"		...	...	6 50
"	5,000	"	6,000	"		...	...	7 00
"	6,000	"	7,000	"		...	...	7 50
"	7,000	"	8,000	"		...	...	8 00
"	8,000	"	9,000	"		...	...	8 50
"	9,000	"	10,000	"		...	...	9 00
"	10,000	"	11,000	"		...	...	9 50
"	11,000		12,000	"		...	...	10 00
"	12,000	"	13,000	"		...	...	10 50
"	13,000	"	14,000	"		...	...	11 00
"	14,000	"	15,000	"		...	...	11 50
"	15,000	"	16,000	"		...	...	12 00
"	16,000	"	17,000	"		...	...	12 50
"	17,000	"	18,000	"		...	...	13 00
"	18,000	"	19,000	"		...	...	13 50
"	19,000	"	20,000	"		...	...	14 00
	For every 1,000 square feet additional or part thereof							0 50

For 5,000 sq. ft. and under, the use of sprinkler is limited to 2 hrs. per day.

" 10,000 " " " " " 4 " "

" 20,000 " " " " " 6 " "

" 30,000 " " " " " 8 " "

Any persons desiring to use their Lawn Sprinklers for longer hours than provided for in the above will be charged in proportion.

Gardens will be charged half the above rates.

These rates are payable in advance, and if paid on or before the 31st day of July in each year a deduction of 33⅓ per cent. will be made from the above.

METER RATES.

A general charge of 27 cents per thousand gallons will be made for all water supplied by meter, subject to a reduction of 33⅓ per cent., should the rates be paid within one month after they become due.

The following charges will be made for the use of the meter in addition to the above:

½″ or ⅝″	per annum	$2 00
¾″	"	4 00
1″	"	8 00
2″	"	14 00
3″	"	25 00
4″	"	45 00
6″	"	100 00

Exhibit D

Schedule D - Water Works By-law, 1947

Schedule C—continued.

		Per annum
Refrigerators	When connected to water and drain, each	$ 3 00
Restaurants	Estimated average number of meals served per day, each	25
Steam Engines	Per horsepower	1 75
All other engines using water	Per horsepower	1 50
Syphons	Not self-acting, each	12 50
Trenches	Water for sinking trenches 6 feet deep and under, for each 100 feet length or part thereof	50
	Over 6 feet deep, for each 100 feet length or part thereof	1 00
Vegetable Fountain or Sprays	Each	1 50
Washing Machines (water-power)	Each	6 25
Wash Racks	Each	12 50

Schedule D.

Meter Rates.

For premises within the City of Toronto, meter rates shall be charged according to a sliding scale based on the total water consumption of the consumer in each quarter year, as follows:

Up to 50,000,000 gallons: at the rate of 15¾ cents for each 1,000 gallons;

50,000,001-75,000,000 gallons: at the rate of 14½ cents for each 1,000 gallons;

Over 75,000,000 gallons: at the rate of 13¾ cents for each 1,000 gallons;

Minimum rate per quarter year $2.50, subject to discount.

For premises outside the City of Toronto, at the rate of 37½ cents for each 1,000 gallons; minimum rate per quarter year $5.00, subject to discount.

(For premises partly in and partly outside the City of Toronto see section 42 of this by-law.)

ROBERT H. SAUNDERS, *Mayor.*

J. W. SOMERS, *City Clerk.*

COUNCIL CHAMBER,
Toronto, November 11, 1947.
(L.S.)

Schedule E

Letter and Questionnaire mailed to communities

Corporation of the City of Toronto

Finance Department

W. A. Wilford B. COMM.

COMMISSIONER OF FINANCE AND CITY TREASURER

REPLY ATTENTION OF: Mr. J. St. Pierre 367-7121
Main Floor
CITY HALL, TORONTO M5H 2N2

CITY OF TORONTO

July 9, 1982

Attention: Water Revenue Administrator

Dear Sir:

RE: Review of Flat Rate Factors - City of Toronto

The Water Works Operation of the City of Toronto is undertaking a review of its flat rate factors and charges. The purpose of the review is to evaluate and report on the effectiveness of the City's flat rate billing system and to update the factors where necessary.

Part of the aforementioned review is a study of other flat rate systems used by other Water Works Operations in Canada and United States. We understand your Water Works Operation is using a system of flat rate billing. It would be appreciated, if the enclosed questionnaire could be completed and returned to us by July 30, 1982. Answers to the questions for the City of Toronto have been provided as a sample of a reply and for your information. If you would like a copy of the report, please check the appropriate space on the questionnaire and a copy will be provided on completion.

Thank you in advance for your anticipated co-operation.

Yours very truly,

REVENUE ADMINISTRATOR.

____/la
Encl

Distribution: See attached list.

City of North Bay
Box 360, 200 McIntyre Street East
North Bay, Ontario
P1B 8H8

Village of Arther
Box 490, 146 George Street
Arther, Ontario
N0G 1A0

Town of Alexandria
Box 700, 90 Main Street North
Alexandria, Ontario
K0C 1A0

City of Timmins
220 Algonquin Boulevard East
Timmins, Ontario
P4R 1E9

Town of Port Elgin
Box 550, 515 Goderich Street
Port Elgin, Ontario
N0H 2C0

City of Owen Sound
City Hall, 808 Second Avenue East
Owen Sound, Ontario

Town of Collingwood
Box 40, Marsh Street
Clarksburg, Ontario
N0H 1J0

Town of Carlton Place
175 Bridge Street
Carlton Place, Ontario
K7C 2V8

City of Brockville
Victoria Hall
Brockville, Ontario
K6V 3P5

Town of Tillsonburg
Town Centre Mall, 2nd Floor
Suite 101, 200 Broadway
Tillsonburg, Ontario
N4G 5A7

City of Cornwall
Box 877, 360 Pitt Street
Cornwall, Ontario
K6J 5T9

Town of Fergus
Box 10, 198 St. Andrew Street West
Fergus, Ontario
N1M 2W7

Town of Cochrane
Box 490, 171 Fourth Avenue
Cochrane, Ontario
P0L 1C0

Town of Kenora
Box 1110, 1 Main Street North
Kenora, Ontario
P9N 3X7

Town of Dryden
30 Van Horne Avenue
Dryden, Ontario
P8N 2A7

Town of Parry Sound
52 Seguin Street
Parry Sound, Ontario
P2A 1B4

Township of Nipigon
Box 160, 25 Second Street
Nipigon, Ontario
P0T 2J0

Town of Geraldton
Box 70, 424 Main Street
Geraldton, Ontario
P0T 1M0

Town of Englehart
Box 399, 3rd Street @ 5th Avenue
Englehart, Ontario
P0J 1H0

Town of Kirkland Lake
Box 757, 3 Kirkland Street West
Kirkland Lake, Ontario
P2N 3K2

City of Calgary
City Hall, Box 2100
Calgary, Alberta
T2P 2M5

City of Victoria
1 Centennial Square
Victoria, British Columbia
V8W 1P6

City of Winnipeg
Civic Centre
Winnipeg, Manitoba
R3B 1B9

City of Fredricton
Box 130
Fredricton, New Brunswick
E3B 4Y7

City of St. John's
City Hall
St. John's, Newfoundland
A1C 5M2

City of Halifax
Box 1749
Halifax, Nova Scotia
B3J 3A5

City of Charlottetown
Box 98
Charlottetown,
Prince Edward Island
C1A 7K2

Ville de Québec
Hotel de Ville
C.P. 700
Québec, P.Q.
G1R 4S9

City of Regina
City Hall, Box 1790
Regina, Sasketchewan
S4P 3C8

City of Yellowknife
City Hall
Yellowknife, N.W.T.
X0E 1H0

City of Detroit
City Hall, 1304 City County Building
Detroit, Michigan
U.S.A. 48226

City of St. Louis
City Hall
St. Louis, Missouri
U.S.A. 63103

City of Louisville
City Hall, 601 West Jefferson Street
Louisville, Kentucky
U.S.A. 40202

City of New York
City Hall, 80 Center Street
New York, New York
U.S.A. 10007

City of Boston
City Hall
Boston, Massachusetts
U.S.A. 02108

City of Baltimore
City Hall
Baltimore, Maryland
U.S.A. 21202

CITY OF TORONTO
FINANCE DEPARTMENT

QUESTIONAIRE ON FLAT RATE FACTORS

Completed by: Municipality _____

Person _____

Address _____

_____

Telephone _____

1. Number of accounts including Flat Rate accounts? _____ Number

2. Number of Flat Rate accounts? _____ Number

3. Reason why these properties are on Flat Rate?

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4. What are the factors charged and the rate?

5. Why were these factors chosen?

6. What was the basis for the rates charged?

7. Good and Bad Points of your Flat Rate Billing System.

7.1 Good Points

7.2 Bad Points

3. Any other comments regarding use of Flat Rate factors to charge for water consumption?

9. Can a copy of your Water Rates By-law be enclosed?

10. Have any studies been done in the past on your Flat Rate system?

If so, please attach copies.

11. Would you like a copy of the City of Toronto's report on Flat Rate factors when completed?

Yes No

THANK YOU FOR YOUR ASSISTANCE.

EMcK/la

9 July 1982